

**Mitchell, Brian**

---

**From:** Arnold, Doug <Doug.Arnold@alston.com>  
**Sent:** Wednesday, January 18, 2017 9:44 AM  
**To:** Mitchell, Brian  
**Subject:** Electrolux: Jefferson Site  
**Attachments:** Human Health and Groundwater Risk Assessments 01-17-17 Final .pdf

Brian:

The results of Golder's site assessment are attached. Be glad to schedule a time to discuss them or address any questions.

Regards, Doug

**Douglas S. Arnold | Alston & Bird LLP**

Partner and Co-Chair,  
Environmental, Energy & Natural Resources Practice Group  
1201 West Peachtree Street | Atlanta, GA 30309-3424  
T: 404-881-7637 | F: 404-881-7777 | E: [doug.arnold@alston.com](mailto:doug.arnold@alston.com) | [www.alston.com/doug\\_arnold/](http://www.alston.com/doug_arnold/)

Atlanta | Beijing | Brussels | Charlotte | Dallas | Los Angeles | New York | Research Triangle | Silicon Valley | Washington DC

17 Consecutive Years on Fortune® Magazine's "The 100 Best Companies to Work For"™

---

NOTICE: This e-mail message and all attachments may contain legally privileged and confidential information intended solely for the use of the addressee. If you are not the intended recipient, you are hereby notified that you may not read, copy, distribute or otherwise use this message or its attachments. If you have received this message in error, please notify the sender by email and delete all copies of the message immediately.

RCRA



558061

## DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

### **Current Human Exposures Under Control**

**Facility Name:** Former Electrolux Home Products Inc. Facility  
**Facility Address:** 601 East Central Street, Jefferson, Iowa

1. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air been considered?

- If yes - check here and continue with #2 below.
- If no - re-evaluate existing data, or
- If data are not available skip to #6 and enter "IN" (more information needed) status code.

### **BACKGROUND**

#### **Definition of Environmental Indicators**

Environmental Indicators (EI) are measures used to track changes in the quality of the environment. The two EI's developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater.

#### **Definition of "Current Human Exposures Under Control" EI**

A positive "Current Human Exposures Under Control" EI determination indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" at or from the identified facility (i.e., site-wide)) that do not consider potential future land- or groundwater-use conditions or ecological receptors.

2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be **"contaminated"** above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	X			PCE, TCE, and breakdown products, TEH,
Air (indoors)		X		
Surface Soil (e.g., <2 ft)		X		
Surface Water		X		
Sediment		X		
Subsurf. Soil (e.g., >2 ft)	X			TPH, oil and grease, TEH, TCE and breakdown products, Non-aqueous Phase Liquid (NAPL),
Air (outdoors)		X		

If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

If unknown (for any media) - skip to #6 and enter "IN" status code.

**Rationale and Reference(s):**

The former Electrolux Home Products, Inc. (Electrolux) manufacturing facility is located at 601 East Central Street in Jefferson, Greene County, Iowa (Site) (see Figure 1). The approximately 20.75 acre Site was previously improved by a 75,542 square-foot single-story former manufacturing/office/warehouse building constructed in 1960, with additions constructed in 1973, 1984, 1988, and 1992. The area of the Site formerly used for manufacturing operations encompasses approximately 7.5 acres of the 20.75-acre property owned by Electrolux (herein referred as the "facility" or "former manufacturing area"). The remainder of the property, south and east of the facility, has historically been leased for agricultural use (see Figure 2). Electrolux terminated the agricultural leases for these areas.

The Site was developed in 1960 to manufacture dishwasher motor transmissions. Electrolux closed the facility in March 2011, decommissioned and removed the manufacturing equipment and other items from the facility buildings, and demolished the buildings. The concrete building slabs, parking areas, chain-link fence around the former manufacturing boundary, and sidewalks are still in place.

In 2010, Electrolux commissioned Golder Associates Inc. (Golder) to review the Site history and develop an environmental assessment plan to evaluate subsurface conditions downgradient and exterior of the facility buildings as part of facility closure activities. Electrolux then voluntarily assessed Site subsurface conditions using a phased approach. Golder completed assessment activities between 2010 and 2016, which are summarized in Golder's Site Assessment Summary Report, dated October 2016.

Electrolux used the following screening levels to determine the media "contamination" status:

- Subsurface soil – Iowa Department of Natural Resources (IDNR) Statewide Soil Standards
- Groundwater – Environmental Protection Agency's Maximum Contaminant Level (USEPA MCL) or IDNR groundwater standards for a Non-Protected Groundwater Source

**Subsurface soil**

Golder delineated soil impacts using Membrane Interface Probes (MIP) and/or Laser-induced Fluorescence (LIF) as screening tools and then collected confirmation soil samples. Shallow soils are primarily impacted by petroleum constituents, which were encountered below the base of the concrete slab floor or approximately two to three feet below ground surface (ft bgs) in landscaped areas (see Table 1). The risk posed by the petroleum-impacted soil is low as analysis of the samples indicates the absence of typical risk-driving volatile organic compounds (VOCs) (e.g., benzene, ethylbenzene, toluene, xylene, etc.) and semi-volatile organic compounds (SVOCs) (e.g., benzo-a-pyrene, benzo-a-anthracene, and anthracene). Fingerprint analysis of NAPL-impacted soils indicates that the oils have undergone significant weathering and degradation.

Golder identified chlorinated VOCs (CVOC)-impacted soils at depths ranging from approximately one to three feet below the base of the concrete floor slab to approximately five to seven ft bgs in the landscaped areas. In one of the most highly CVOC-impacted groundwater areas near monitoring wells MW-19, CVOCs were detected in MIP-3 at approximately six ft bgs. Based on the depth of the impacted soils, presence of the concrete slab floor, secure perimeter fence, the potential for direct exposure to impacted soils is limited to trespassers and lawn maintenance personnel.

**Groundwater**

The most frequently detected compounds above USEPA's MCLs are TCE and its associated degradation product, cis-1,2-dichloroethene (cis-1,2-DCE) as shown in Table 2. Other compounds detected above USEPA MCLs include tetrachloroethylene (PCE), vinyl chloride, 1,1-dichloroethene (1,1-DCE), trans-1,2-dichloroethene, and 1,1,1-trichloroethane (TCA). Electrolux has also observed the presence of light non-aqueous phase liquid (LNAPL) in two monitoring wells on-Site.

- Groundwater within the oxidized brown and unoxidized gray till aquitard (upper 30 feet) is impacted by CVOCs, primarily TCE and its breakdown products in the area of the former concrete steel-lined trench located on the eastern portion of former Building 1 (see Figures 3 and 4).

## **Current Human Exposures Under Control**

### **Environmental Indicator (EI)**

Page 3

- The vertical extent of CVOC impact in groundwater is limited to approximately 30 feet below ground surface (ft. bgs) except in the area of the former concrete steel-lined trench located on the eastern portion of former Building 1 and downgradient (i.e., southeast) of the former concrete steel-lined trench.
- Groundwater samples collected from six monitoring wells installed within the yellow-brown till and one monitoring well in the dark grey till indicate the presence of CVOCs, primarily TCE. An approximately 100-foot wide area of VOC-impacted groundwater is present from the area near the eastern concrete steel-lined trench and extends to the south/southeast towards MW-64 and MW-66 (see Figure 5). An analysis of TCE concentration trends in wells screened in the yellow-brown till located on the downgradient side of the CVOC-impacted groundwater area indicates that TCE-impacted groundwater does not extend off Electrolux-owned property.
- Groundwater samples collected from the MW-62 and MW-63 screened within the dark gray till indicate that VOCs have not migrated vertically into this unit outside of the area near the eastern concrete steel-lined trench.
- Groundwater samples collected from MW-67, screened in the Pleistocene Sand and Gravel unit, indicate that Site impacts have not migrated to this unit.
- Total extractable hydrocarbons (TEH)-impacted groundwater is present in LNAPL areas, but attenuates rapidly both horizontally and vertically. The horizontal distribution of TEH includes three distinct areas of petroleum impacts as shown in Figure 6. Analytical data indicates the petroleum is associated with a cutting or machining oils, which do not contain typical risk-driving VOCs (e.g., benzene).

Overall, CVOC-impacted groundwater is present in the former manufacturing area and does not extend off-Site. The highest CVOC concentrations are detected in the upper 30 feet of till and decrease vertically by several orders of magnitude. The Pleistocene Sand and Gravel Unit has not been shown to be impacted from any constituents originating from the Electrolux site.

#### **Indoor Air**

There are no structures on Site. The closest residential structure is located cross-gradient and approximately 350 feet west of the on-Site CVOC-impacted groundwater area (see Figures 5 through 7). Given the limited horizontal extent of the CVOC-impacted groundwater area and low hydraulic conductivity of the upper till units (i.e.,  $2.06 \times 10^{-6}$  centimeters per second – see Table 3), off-Site migration of CVOC-impacted groundwater is not present. Therefore, indoor air quality associated with on-Site CVOC-impacted groundwater is not a concern.

#### **Surface Water/Sediments**

There are no surface water features located within approximately one mile of the Site (well beyond the extent of CVOC-impacted groundwater). Therefore, surface water is not considered a media known or reasonably suspected to be contaminated above screening levels.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

## Current Human Exposures Under Control

### Environmental Indicator (EI)

Page 4

#### Summary Exposure Pathway Evaluation Table

<u>Contaminated Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>1</sup>
Groundwater	No	No	No	No	No	No	No
Air (indoors)							
Soil (surface, e.g., <2 ft)	No	No	No	No	No	No	No
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)				No			No
Air (outdoors)							

#### Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.
2. Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces (" "). While these combinations may not be probable in most situations, they may be possible in some settings and should be added as necessary.

If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

#### Rationale and Reference(s):

##### Groundwater

Based on assessment activities, Site geology includes approximately 89 feet of till overlying the Pleistocene Sand and Gravel Unit. The Site geology matches the information provide in the IDNR databases and literature review. All of the units, except the coarse-grained yellow-brown till and the Pleistocene Sand and Gravel Unit are best characterized as aquitards. The rate and volume of groundwater flow in the aquitards is low based on hydraulic conductivity values calculated for these units. Vertical hydraulic conductivity in these tills are usually lower than horizontal hydraulic conductivity values. Based on the low well yields, the till units are not suitable as a groundwater resource.

The IDNR GeoSam database indicates that the City of Jefferson uses the Pleistocene Sand and Gravel Unit for potable water. Boring logs indicate that the Pleistocene Sand and Gravel Unit is not present west of the Site. Consequently, the only wells installed west of the Site are three geothermal wells and one petroleum test boring. Golder did not observe any private wells within 0.3 miles of the Site during a well inventory study in 2016, which confirms the GeoSam database findings.

Footnotes:

<sup>1</sup> Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

## **Current Human Exposures Under Control**

### **Environmental Indicator (EI)**

Page 5

The capture zones of the two City of Jefferson municipal well fields screened within the Pleistocene Sand and Gravel Unit as delineated in the Jefferson Groundwater Investigation (IDNR, 2013) do not extend to the Site. The IDNR study indicates that the Site is located just beyond the 10-year capture zone (i.e., near the southwest corner of the Site) for the well field located within the city limits of Jefferson (i.e., approximately 4,200 southwest of the Site). The capture zones of a second Jefferson well field, located approximately 5,700 feet northwest of the Site, do not extend in a direction towards the Site.

To assess groundwater quality in the Pleistocene Sand and Gravel Unit, Electrolux installed monitoring well MW-67, which is located between the CVOC-impacted groundwater area and the City of Jefferson well field located southwest of the Site. Monitoring well MW-67 is screened across the full thickness (i.e., approximately eight feet) of the Pleistocene Sand and Gravel Unit underlying the Site. Golder collected groundwater samples from MW-67 in November 2015 and July 2016. The laboratory did not detect any CVOCs at concentrations above the laboratory reporting limits. Based on the groundwater analytical results, overlying low hydraulic conductivity tills, and stable or reducing CVOC groundwater trends, there is no complete pathway for impacted groundwater to reach the Pleistocene Sand and Gravel Unit.

#### **Soil**

Shallow soils are primarily impacted by petroleum constituents, which were encountered below the base of the concrete slab floor or approximately two to three ft bgs in landscaped areas. (CVOC)-impacted soils were detected at depths ranging from approximately one to three feet below the base of the concrete floor slab to approximately five to seven ft bgs in the landscaped areas. Based on the location (i.e., below the concrete slab floor), depth of the impacted soils, and security around the former manufacturing area, access to impacted soils is not indicated.

Assessment activities conducted at the former Electrolux facility in Jefferson, Iowa have systematically and adequately delineated the nature and extent of impacts to soil and groundwater at the Site. There are no complete pathways to receptors such as public drinking water supply wells, streams or rivers, public use areas, or occupied buildings (i.e., vapor intrusion concerns) near the Site. Most of the impacted soil and groundwater areas are located beneath the concrete slab of the former buildings or concrete-paved driveways. Access to and potential leaching of impacted soils located beneath the concrete slab and driveways is limited. Impacted soils in the landscaped areas are typically encountered below two to three ft bgs. The former manufacturing facility is surrounded by a secure perimeter chain-link fence to deter trespassers. Electrolux has no current plans to develop the Site (no construction activities planned) and intends to place institutional controls on the Site to limit potential exposures from on-Site impacted soil and groundwater. Consequently, the potential exposure risks to human health and the environment at this Site are minimal and controlled.

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be "**significant**"<sup>2</sup> (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

\_\_\_\_\_ If no (exposures cannot be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

Footnotes:

<sup>2</sup>If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

**Current Human Exposures Under Control**

**Environmental Indicator (EI)**

Page 6

If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

**Rationale and Reference(s):**

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

If no (there are current exposures that can be reasonably expected to be "unacceptable") - continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

**Rationale and Reference(s):**

6. Check the appropriate status codes for the Current Human Exposures Under Control EI event code (CA725):

YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Electrolux Jefferson facility, located at 601 East Central Street, Jefferson, IA under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

NO - "Current Human Exposures" are NOT "Under Control."

IN - More information is needed to make a determination.

Locations where References may be found:

Site Assessment Summary Report, Golder Associates Inc., October 2016

---

**CURRENT HUMAN EXPOSURES UNDER CONTROL (CA725)**

## **TABLES**

**Table 1:**  
**Summary of Soil Analytical Data**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Analytic Method		OA-1	SW9071B	TEH Method OA-2				RCRA Metals					Volatile Organic Compounds EPA Method 8260B							
Compound		TPH as Gasoline	Oil & Grease, Total Rec	Diesel (C12-C22)	Gasoline	Motor Oil	TEPH	Barium	Chromium	Lead	Arsenic	Mercury	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	
Iowa DNR Statewide Standard for Soil		NS	NS	28,000	NS	9,400	NS	15,000	210	400	17	23	150,000,000	15,000	54,000	1,500,000	380,000	100	760,000	
Reporting Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
Date	Location	Start Depth (ft bgs)	End Depth (ft bgs)																	
Mar-2011	MW-10	2.5	5	< 10.0 (250)	170	< 10.0	< 10.0	92.3	15.7	8.44	7.32	< 0.0235	< 4.84	< 4.84	< 4.84	< 4.84	< 4.84	< 4.84	< 4.84	
	MW-11	2.5	5	< 10.0 (250)	150	< 10.0	< 10.0	90.1 (3)	16.4 (3)	< 17.5 (3)	6.23	< 0.0233	< 4.46	< 4.46	< 4.46	< 4.46	< 4.46	< 4.46	< 4.46	
MW-15	MW-12	1	5	< 10.0 (250)	160	< 10.0	< 10.0	56.8	10.5	7.52	6.27	< 0.0255	< 5.70	< 5.70	< 5.70	< 5.70	< 5.70	< 5.70	< 5.70	
	MW-13	2.5	5	< 10.0 (250)	150	< 10.0	< 10.0	56.2	13.5	7.11	6.18	< 0.0202	< 4.44	< 4.44	< 4.44	< 4.44	< 4.44	< 4.44	< 4.44	
MW-16	MW-14	2.5	5	< 10.0 (250)	140	< 10.0	< 10.0	91.7	15.6	8.42	6.26	< 0.0230	< 4.78	< 4.78	< 4.78	< 4.78	< 4.78	< 4.78	< 4.78	
	MW-15	0	2.5	< 10.0 (250)	320	< 19.4	< 19.4	< 19.4	177	21.4	31.2	6.48	< 0.0246	< 5.14	< 5.14	< 5.14	< 5.14	< 5.14	< 5.14	
MW-17	MW-16	2.5	5	< 10.0 (250)	< 580	< 10.0	< 10.0	< 10.0	75.2	14.7	7.42	3.03	< 0.0237	< 4.85	< 4.85	< 4.85	< 4.85	< 4.85	< 4.85	
	MW-17	5	7.5	< 10.0 (250)	150	< 10.0	< 10.0	< 10.0	50.5	14.4	6.62	6.80	< 0.0239	< 4.98	< 4.98	< 4.98	< 4.98	< 4.98	< 4.98	
MW-18	MW-16	7.5	10	< 10.0 (250)	< 550	< 10.0	< 10.0	79.5 (3)	14.1 (3)	< 17.6 (3)	5.23	< 0.0234	< 4.88	< 4.88	< 4.88	< 4.88	< 4.88	< 4.88	< 4.88	
	MW-17	10	13	< 10.0 (250)	130	< 10.0	< 10.0	88.8	14.6	7.83	3.64	< 0.0232	< 4.62	< 4.62	< 4.62	< 4.62	< 4.62	< 4.62	< 4.62	
MW-19	MW-16	0	2.5	< 10.0 (250)	< 600	< 10.0	< 10.0	138	19.2	8.51	8.56	0.0255	< 4.86	< 4.86	< 4.86	< 4.86	< 4.86	< 4.86	< 4.86	
	MW-17	2.5	5	< 10.0 (250)	120	< 10.0	< 10.0	108	17.8	8.16	6.84	0.0275	< 4.61	< 4.61	< 4.61	< 4.61	< 4.61	< 4.61	< 4.61	
MW-20	MW-18	5	7.5	< 10.0 (250)	130	< 10.0	< 10.0	59.5	14.5	7.47	4.15	< 0.0233	< 4.78	< 4.78	< 4.78	< 4.78	< 4.78	< 4.78	< 4.78	
	MW-17	7.5	10	< 10.0 (250)	110	< 10.0	< 10.0	74.1	15.9	7.92	4.25	< 0.0212	< 4.33	< 4.33	< 4.33	< 4.33	< 4.33	< 4.33	< 4.33	
MW-21	MW-18	0	2.5	< 10.0 (250)	< 530	< 10.0	< 10.0	130	17.5	9.05	5.26	< 0.0232	< 4.74	< 4.74	< 4.74	< 4.74	< 4.74	< 4.74	< 4.74	
	MW-17	2.5	5	< 10.0 (250)	150	< 10.0	< 10.0	81.1 (3)	15.1 (3)	< 17.4 (3)	4.71	< 0.0232	< 4.56	< 4.56	< 4.56	< 4.56	< 4.56	< 4.56	< 4.56	
MW-22	MW-19	5	7.5	< 10.0 (250)	630	103	< 10.0	215	318	75.3	13.9	9.83	9.50	< 0.0235	< 4.83	< 4.83	< 4.83	< 4.83	< 4.83	< 4.83
	MW-18	7.5	10	< 10.0 (250)	1400	417	34.2	978	1,430	65.5	12.1	8.71	7.27	< 0.0202	< 4.23	< 4.23	< 4.23	< 4.23	< 4.23	< 4.23
MW-23	MW-19	0	2.5	< 10.0 (250)	190	< 10.0	< 10.0	138	20.4	6.45	5.31	< 0.0241	< 5.12	< 5.12	< 5.12	< 5.12	< 5.12	< 5.12	< 5.12	
	MW-18	2.5	5	< 10.0 (250)	220	< 10.0	< 10.0	100	97.9 (3)	14.3 (3)	< 17.2 (3)	4.79	< 0.0229	< 4.87	< 4.87	< 4.87	< 4.87	< 4.87	< 4.87	
MW-20	MW-19	5	7.5	< 10.0 (250)	760	< 10.0	< 10.0	100	59.6 (5)	14.8 (5)	< 28.8 (5)	4.69	< 0.0230	< 4.82	< 4.82	< 4.82	< 4.82	< 4.82	< 4.82	
	MW-18	7.5	10	< 10.0 (250)	610	< 10.0	< 10.0	104	18.2	5.78	3.56	< 0.0209	< 4.54	< 4.54	< 4.54	< 4.54	< 4.54	< 4.54	< 4.54	
MW-21	MW-19	0	2.5	< 10.0 (250)	290	< 10.0	< 10.0	100	92.2	16.9	5.68	4.23	< 0.0227	< 5.05	< 5.05	< 5.05	< 5.05	< 5.05	< 5.05	
	MW-18	2.5	5	< 10.0 (250)	360	< 10.0	< 10.0	87.2 (3)	16.4 (3)	6.39	< 17.3 (3)	< 5.78	< 5.78	< 5.78	< 5.78	< 5.78	< 5.78	< 5.78	< 5.78	
MW-22	MW-20	5	10	12.8 (250)	270	< 10.0	< 10.0	100	58.5 (3)	16.7 (3)	< 17.4 (3)	2.81	< 0.0232	1,300 (100)	< 4.43	< 4.43	< 4.43	258	< 4.43	< 4.43
	MW-20	5	10	12	450	< 10.0	< 10.0	100	48.7 (3)	13.3 (3)	< 17.3 (3)	2.68	< 0.0230	5,870 (100)	< 4.50	23.8	13.5	2,150 (100)	< 4.50	< 4.50
MW-23	MW-20	0	2.5	< 10.0 (250)	430	< 10.0	< 10.0	39.4	39.4	83.6	14.9	< 5.73	8.76	0.0234	< 5.07	< 5.07	< 5.07	< 5.07	< 5.07	< 5.07
	MW-20	2.5	5	< 10.0 (250)	330	< 10.0	< 10.0	100	135 (3)	25.6 (3)	< 18.7 (3)	1.25	0.0270	< 5.05	< 5.05	< 5.05	< 5.05	< 5.05	< 5.05	< 5.05
MW-21A	MW-20	5	7.5	< 10.0 (250)	310	< 10.0	< 10.0	100	83.2	16.7	< 5.80	6.15	< 0.0232	< 4.10	< 4.10	< 4.10	< 4.10	< 4.10	< 4.10	< 4.10
	MW-20	7.5	10	< 10.0 (250)	320	< 10.0	< 10.0	64.8	11.8	< 5.75	5.37	< 0.0230	< 4.54	< 4.54	< 4.54	< 4.54	< 4.54	< 4.54	< 4.54	
MW-22A	MW-21	0	2.5	10.5 (250)	360	29.1	< 19.6	109	138	112	15.9	6.13	2.07	0.0262	< 4.75	< 4.75	< 4.75	< 4.75	< 4.75	32.2
	MW-21	2.5	5	95.9 (250)	5,300	2,950 (25)	298	6,010 (25)	9,260 (25)	99.1	12.2	< 6.08	3.74	0.0256	< 5.33	< 5.33	< 5.33	< 5.33	< 5.33	223
MW-22B	MW-21A	5	10	138 (250)	19,000	6,150 (50)	837	12,700 (50)	19,700 (50)	138	17.1	9.57	3.46	< 0.0245	10.6	23.1	< 5.25	< 5.25	< 5.25	279
	MW-21A	10	12	15.3 (250)	180	21.2	10.4	73.8	105	105 (3)	14.9 (3)	< 17.2 (3)	6.03	< 0.0207	< 4.38	< 4.38	10.6	10.6	10.6	< 4.38
MW-23B	MW-22A	0	2.5	< 10.0 (250)	310	< 19.8	< 19.8	< 19.8	168	19.8	7.95	2.83	< 0.0246	< 5.25	< 5.25	< 5.25	< 5.25	12.6	12.6	
	MW-22A	2.5	5	44.5 (250)	6,700	204	28.9	533	767	102	15.3	< 5.98	4.42	< 0.0239	< 447 (100)	982 (100)	< 447 (100)	< 447 (100)	< 447 (100)	14,600 (100)
MW-23C	MW-22B	0	2.5	< 10.0 (250)	1,800	151	< 19.1	566	717	124	19.9	10.2	2.72	< 0.0247	< 5.01	< 5.01	151	< 5.01	< 5.01	< 5.01
	MW-22B	2.5	5	< 10.0 (250)	330	< 18.9	33.4	33.4	136	23.1	11.4	< 1.24	< 0.0247	< 5.13	< 5.13	60.6	60.6	60.6	60.6	60.6
MW-23D	MW-23B	5	10	114 (250)	5,000	1,210 (15)	480	4,160 (15)	5,850 (15)	366	28.8	14.8	9.27	0.0384	< 5.37	< 5.37	37.8	37.8	37.8	37.8
	MW-23B	10	12	< 10.0 (250)	< 570	< 10.0	< 10.0	10.8	66.1	15.2	11.3	4.34	< 0.0203	< 4.89	< 4.89	< 4.89	48.5	48.5	48.5	< 4.89
MW-23E	MW-23D	0	2.5	< 10.0 (250)	140	< 18.9	< 18.9	22	22	114	20.6	8.96	4.86	< 0.0238	< 5.95	< 5.95	< 5.95	< 5.95	< 5.95	< 5.95
	MW-23D	2.5	5	< 10.0 (250)	220	< 10.0	< 10.0	93.3	20.3	102	14.8	0.0336	< 5.13	< 5.13	< 5.13	< 5.13	< 5.13	< 5.13	< 5.13	
MW-23F	MW-23E	5	7.5	< 10.0 (250)	< 590	< 10.0	< 10.0	10.0	56.7	17.9</td										

**Table 1:**  
**Summary of Soil Analytical Data**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

**Table 1:**  
**Summary of Soil Analytical Data**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Analytic Method			PCBs SW8082								
			Compound	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1268
			Iowa DNR Statewide Standard for Soil Reporting Units	NS							
Date	Location	Start Depth (ft bgs)	End Depth (ft bgs)								
Mar-2011	MW-10	2.5	5	NA							
	MW-11	2.5	5	NA							
	MW-12	1	5	NA							
	MW-13	2.5	5	NA							
	MW-14	2.5	5	NA							
	MW-15	0	2.5	<0.0592	<0.0592	<0.0592	<0.0592	<0.0592	<0.0592	<0.0592	<0.0592
	MW-16	2.5	5	NA							
	MW-17	5	7.5	NA							
	MW-18	7.5	10	NA							
	MW-19	10	13	NA							
	MW-20	0	2.5	<0.0579	<0.0579	<0.0579	<0.0579	<0.0579	<0.0579	<0.0579	<0.0579
	MW-21	2.5	5	NA							
	MW-21A	5	10	NA							
	MW-22	10	12	NA							
	MW-23	0	2.5	<1.23	<1.23	<1.23	<1.23	<1.23	<1.23	<1.23	<1.23
	MW-21A	2.5	5	NA							
	MW-22	5	10	NA							
	MW-23	10	12	NA							
	MW-21A	0	2.5	<1.18	<1.18	<1.18	<1.18	<1.18	<1.18	<1.18	<1.18
	MW-22	2.5	5	NA							
	MW-23	5	10	NA							
	MW-21A	10	12	NA							
	MW-22	0	2.5	<0.677	<0.677	<0.677	<0.677	<0.677	<0.677	<0.677	<0.677
	MW-23	2.5	5	NA							
	MW-21A	5	10	NA							
	MW-22	10	12	NA							
	MW-23	0	2.5	<0.0592	<0.0592	<0.0592	<0.0592	<0.0592	<0.0592	<0.0592	<0.0592
	MW-21A	2.5	5	NA							
	MW-22	5	7.5	NA							
	MW-23	7.5	10	NA							
	MW-21A	10	12	NA							

**Table 2: Summary of Detected Constituents in Groundwater**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Analyte	CAS-RN	MCL	Iowa DNR	MW-5		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-13		MW-14	
				Apr 2011	Apr 2011	Apr 2011	Dec 2012	Apr 2014	Jul 2014	Oct 2014	Apr 2011	Dec 2012	May 2012	Dec 2012	Apr 2011	Dec 2012							
<b>Extractable Petroleum Hydrocarbons (ug/L)</b>																							
Diesel (C12-C22)	-	NS	NS	< 300	< 300	< 300	-	-	-	-	1,390	< 300	< 300	-	359	-	360	< 300	< 300	-	790	< 300	
Gasoline	-	NS	NS	< 300	< 300	< 300	-	-	-	-	< 300	< 300	< 300	-	< 300	-	< 300	< 300	< 300	-	< 300	< 300	
Motor Oil	-	NS	NS	< 300	< 300	< 300	-	-	-	-	514	1,440	< 300	-	< 300	-	< 300	< 300	-	478	< 300	< 300	
Total Extractable Petroleum Hydrocarbon	-	NS	NS	< 300	< 300	< 300	-	-	-	-	1,910	1,440	< 300	-	359	-	360	< 300	< 300	-	1,270	< 300	
<b>Volatile Organic Compounds (ug/L)</b>																							
Tetrachloroethene	127-18-4	5	1,700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Trichloroethene	79-01-6	5	76	< 1.00	< 1.00	< 1.00	2.37	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.43	< 1.00	
cis-1,2-Dichloroethene	156-59-2	70	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	2.57	< 1.00	1.49	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Vinyl Chloride	75-01-4	2	10	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,1,1-Trichloroethane	71-55-6	200	70,000	< 1.00	< 1.00	3.61	2.16	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,1,2-Trichloroethane	79-00-5	5	61	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,1-Dichloroethane	75-34-3	NS	700	< 1.00	< 1.00	5.22	4.85	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 4.00	< 1.00	
1,1-Dichloroethene	75-35-4	7	180	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	
1,2,4-Trimethylbenzene	95-63-6	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,2-Dichloroethane	107-06-2	5	38	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,3,5-Trimethylbenzene	108-67-8	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
2-Butanone	78-93-3	NS	21,000	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0		
Acetone	67-64-1	NS	32,000	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	26.9	< 10.0	
Benzene	71-43-2	5	64	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Carbon Disulfide	75-15-0	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Chloroethane	75-00-3	NS	14,000	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	
Chloroform	67-66-3	80	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Chlormethane	74-87-3	NS	NS	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	
Cymene	99-87-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Ethylbenzene	100-41-4	700	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Isopropylbenzene	98-82-8	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Naphthalene	91-20-3	NS	700	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	
n-Butylbenzene	104-51-8	NS	1,800	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
n-Propylbenzene	103-65-1	NS	17,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
sec-Butylbenzene	135-98-8	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
tert-Butylbenzene	98-06-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Toluene	108-88-3	1,000	5,000	< 1.00	< 1.00	< 1.00	1.69	< 1.00	< 1.00	< 1.00	< 1.00	1.05	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
trans-1,2-Dichloroethene	156-60-5	100	700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Xylenes, Total	1330-20-7	10,000	50,000	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	
1,4-Dioxane	123-91-1	NS	1,000	NA																			

**Field Parameters**

pH  
 Specific conductance (mS/cm)  
 Temperature (Degrees Celsius)  
 ORP (millivolts)  
 DO (mg/L)

NS = No standard  
 NA = Not analyzed  
 mg/L = milligrams per liter  
 MCL = Environmental Protection Agency's Maximum Contaminant Level  
 Bold = Compound exceeds MCL  
 FD = field duplicate sample

Total Extractable Petroleum Hydrocarbons are a sum of the three petroleum ranges: diesel, gasoline, and motor oil.

**Table 2: Summary of Detected Constituents in Groundwater  
Former Electrolux Manufacturing Facility  
Jefferson, Iowa**

Analyte	CAS-RN	MCL	Iowa DNR	MW-15							MW-16					MW-17				MW-18		
				Apr 2011	May 2012	Dec 2012	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Apr 2011	May 2012	Dec 2012	Apr 2011	May 2012	Dec 2012	Apr 2011	May 2012	Dec 2012	Apr 2011	May 2012	Dec 2012
<b>Extractable Petroleum Hydrocarbons (ug/L)</b>																						
Diesel (C12-C22)	-	NS	NS	< 375	< 300	-	-	-	-	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-
Gasoline	-	NS	NS	< 375	< 300	-	-	-	-	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-
Motor Oil	-	NS	NS	< 375	< 300	-	-	-	-	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-
Total Extractable Petroleum Hydrocarbon	-	NS	NS	< 375	< 300	-	-	-	-	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-
<b>Volatile Organic Compounds (ug/L)</b>																						
Tetrachloroethene	127-18-4	5	1,700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	2.49	3.15	1.73	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Trichloroethene	79-01-6	5	76	122	115	224	90.9	49.6	59	77.8	223	281	269	11.2	13	37	76.3	142	139			
cis-1,2-Dichloroethene	156-59-2	70	350	4.52	16.5	28.2	13.7	4.89	11	12.3	19.2	17.3	19.8	39.8	2.30	2.87	11.4	39.9	33.6	62.8		
Vinyl Chloride	75-01-4	2	10	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
1,1,1-Trichloroethane	71-55-6	200	70,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
1,1,2-Trichloroethane	79-00-5	5	61	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
1,1-Dichloroethane	75-34-3	NS	700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	3.01	4.36	9.78
1,1-Dichloroethene	75-35-4	7	180	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	2.14
1,2,4-Trimethylbenzene	95-63-6	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
1,2-Dichloroethane	107-06-2	5	38	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
1,3,5-Trimethylbenzene	109-67-8	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
2-Butanone	78-93-3	NS	21,000	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Acetone	67-64-1	NS	32,000	59.8	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	51	< 10.0	< 10.0
Benzene	71-43-2	5	64	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide	75-15-0	NS	3,500	1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Chloroethane	75-00-3	NS	14,000	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00
Chloroform	67-66-3	80	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Chloromethane	74-87-3	NS	NS	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00
Cymene	99-87-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Ethylbenzene	100-41-4	700	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Isopropylbenzene	98-62-8	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Naphthalene	91-20-3	NS	700	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
n-Butylbenzene	104-51-8	NS	1,800	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
n-Propylbenzene	103-65-1	NS	17,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
sec-Butylbenzene	135-98-8	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
tert-Butylbenzene	98-06-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Toluene	108-88-3	1,000	5,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.36	< 1.00	< 1.00	1.78	< 1.00	< 1.00	< 1.00
trans-1,2-Dichloroethene	156-60-5	100	700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Xylenes, Total	1330-20-7	10,000	50,000	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00
1,4-Dioxane	123-91-1	NS	1,000	NA																		
<b>Field Parameters</b>																						
pH	-	NS	NS	7.28	7.08	7.18	6.67	7.28	7.21	-	7.06	7.48	NR	7.34	7.22	7.22	7.21	10.29	8	7.99		
Specific conductance (mS/cm)	-	NS	NS	0.624	0.711	0.587	0.757	0.712	0.912	-	0.802	0.392	NR	0.451	0.494	0.652	0.511	0.288	0.609	0.673		
Temperature (Degrees Celsius)	-	NS	NS	11.82	14.39	13.19	18.97	8.47	16.67	-	16.6	10.88	NR	13.59	9.75	16.11	13.15	8.67	15.37	9.77		
ORP (millivolts)	-	NS	NS	NR	116.9	NR	-63.4	201.4	44.6	-	-141.1	NR	NR	NR	NR	NR	NR	102.5	NR	25.5	NR	
DO (mg/L)	-	NS	NS	2.56	6.66	1.63	0.43	4.63	5.84	-	0.48	4.87	NR	2.43	3.07	4.82	3.58	8.09	3.54	3.93		

Notes:  
 Method OA-2 and SW8260B results are in micrograms per liter ( $\mu\text{g/L}$ ). NS = No standard  
 $\text{mS/cm} = \text{millisiemens per centimeter}$  NA = Not analyzed  
 $\text{mg/L} = \text{milligrams per liter}$  NR = Not recorded  
 MCL = Environmental Protection Agency's Maximum Contaminant Level N = normal sample  
**Bold** = Compound exceeds MCL FD = field duplicate sample  
 Total Extractable Petroleum Hydrocarbons are a sum of the three petroleum ranges: diesel, gasoline, and motor oil.



**Table 2: Summary of Detected Constituents in Groundwater**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Analyte	CAS-RN	MCL	Iowa DNR	MW-24						MW-25D						MW-25S											
				May 2012		Dec 2012		Oct 2013		Apr 2014		Jul 2014		Oct 2014		May 2012		Dec 2012		Oct 2013		Apr 2014		Jul 2014		Oct 2014	
				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<b>Extractable Petroleum Hydrocarbons (ug/L)</b>																											
Diesel (C12-C22)	-	NS	NS	< 300	-	-	-	-	-	-	< 300	< 300	-	-	-	-	-	98,000	43,700	-	-	-	-	-	-	-	-
Gasoline	-	NS	NS	< 300	-	-	-	-	-	-	< 300	< 300	-	-	-	-	-	38,100	16,400	-	-	-	-	-	-	-	-
Motor Oil	-	NS	NS	< 300	-	-	-	-	-	-	< 300	< 300	-	-	-	-	-	597	1,070	-	-	-	-	-	-	-	-
Total Extractable Petroleum Hydrocarbon	-	NS	NS	< 300	-	-	-	-	-	-	< 300	< 300	-	-	-	-	-	137,000	61,200	-	-	-	-	-	-	-	-
<b>Volatile Organic Compounds (ug/L)</b>																											
Tetrachloroethene	127-18-4	5	1,700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
Trichloroethene	79-01-6	5	76	3.58	< 1.00	< 1.00	< 1.00	< 1.00	2.43	64.1	61	61.6	21.1	10.5	5.08	10.2	9.1	9.11	13,700	185	< 200	1,320	< 100	< 100	< 100	< 100	
cis-1,2-Dichloroethene	156-59-2	70	350	< 1.00	< 1.00	4.35	< 1.00	< 1.00	4.79	28.3	29.6	6.64	2.5	< 1.00	< 1.00	< 1.00	< 1.00	29,800	59,000	38,900	45,900	33,400	30,400				
Vinyl Chloride	75-01-4	2	10	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	15.1	15.6	1.10	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	16.1	2,810	2,180	6,060	3,030	2,890				
1,1,1-Trichloroethane	71-55-6	200	70,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
1,1,2-Trichloroethane	79-00-5	5	61	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.15	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	
1,1-Dichloroethane	75-34-3	NS	700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
1,1-Dichloroethene	75-35-4	7	180	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	2.91	< 200	50.6	88.6	< 200					
1,2,4-Trimethylbenzene	95-63-6	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
1,2-Dichloroethane	107-06-2	5	38	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
1,3,5-Trimethylbenzene	108-67-8	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
2-Butanone	78-93-3	NS	21,000	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 100	264	< 100	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	
Acetone	67-64-1	NS	32,000	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	45.2	2,840	4,250	7,590	9,790	4,710				
Benzene	71-43-2	5	64	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 50.0	< 5.00	< 5.00	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	
Carbon Disulfide	75-15-0	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	11.9	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
Chloroethane	75-00-3	NS	14,000	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 400	< 40	< 40	< 400	< 400	< 400	< 400	< 400	< 400	
Chloroform	67-66-3	80	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
Chloromethane	74-87-3	NS	NS	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 300	< 30	< 30	< 300	< 300	< 300	< 300	< 300	< 300	
Cymene	99-87-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
Ethylbenzene	100-41-4	700	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
Isopropylbenzene	98-82-8	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
Naphthalene	91-20-3	NS	700	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 50	< 50	< 50	< 500	< 500	< 500	< 500	< 500	< 500	
n-Butylbenzene	104-51-8	NS	1,800	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
n-Propylbenzene	103-85-1	NS	17,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
sec-Butylbenzene	135-98-8	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
tert-Butylbenzene	98-06-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 10.0	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	
Toluene	108-88-3	1,000	5,000	1.23	1.08	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
trans-1,2-Dichloroethene	156-60-5	100	700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.63	230	205	686	137	110				
Xylenes, Total	1330-20-7	10,000	50,000	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 300	< 300	< 300	< 300	< 300	
1,4-Dioxane	123-91-1	NS	1,000	NA</																							

**Table 2: Summary of Detected Constituents in Groundwater**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Analyte	CAS-RN	MCL	Iowa DNR	MW-26D						MW-26S						MW-27						MW-28											
				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
<b>Extractable Petroleum Hydrocarbons (ug/L)</b>																																	
Diesel (C12-C22)	-	NS	NS	< 429	-	-	-	-	-	< 300	< 300	-	-	-	-	7,440	-	7,140	3,360	-	-	-	-	-	-	-	-	-	-				
Gasoline	-	NS	NS	< 429	-	-	-	-	-	472	< 300	-	-	-	-	2,270	-	3,430	6,530	-	-	-	-	-	-	-	-	-	-	-			
Motor Oil	-	NS	NS	< 429	-	-	-	-	-	< 300	520	-	-	-	-	< 341	-	< 380	< 300	-	-	-	-	-	-	-	-	-	-	-			
Total Extractable Petroleum Hydrocarbon	-	NS	NS	< 429	-	-	-	-	-	472	520	-	-	-	-	9,710	-	10,600	9,890	-	-	-	-	-	-	-	-	-	-	-			
<b>Volatile Organic Compounds (ug/L)</b>																																	
Tetrachloroethene	127-18-4	5	1,700	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 50	< 100	< 100	< 100	< 1.00	< 1.00	< 100	< 100	39.9	42.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
Trichloroethene	79-01-6	5	76	637	338	76.2	123	51.5	133	43,300	19,000	27,900	43,200	67,200	56,000	8.13	1.67	28,400	33,400	38,800	48,600	31,300	32,700	31,300	32,700	31,300	32,700	31,300	32,700	31,300	32,700		
cis-1,2-Dichloroethene	156-59-2	70	350	26.6	13.3	5.18	6.68	13.7	12	778	< 1000	545	518	792	959	1.73	62.8	81,400	82,800	91,400	102,000	85,500	66,600	85,500	66,600	85,500	66,600	85,500	66,600	85,500	66,600	85,500	66,600
Vinyl Chloride	75-01-4	2	10	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	32.1	< 1000	5.29	< 1.00	< 100	< 100	1.33	< 1.00	5,630	6,360	6,040	10,500	7,620	8,540	8,540	8,540	8,540	8,540	8,540	8,540	8,540	8,540		
1,1,1-Trichloroethane	71-55-6	200	70,000	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
1,1,2-Trichloroethane	79-00-5	5	61	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 100	< 100	< 1.00	< 1.00	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
1,1-Dichloroethane	75-34-3	NS	700	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	1.8	< 100	< 100	< 100	40	31.4	< 100	< 100	5.2	5.57	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
1,1-Dichloroethene	75-35-4	7	180	< 20.0	< 20.0	< 2.00	< 2.00	< 2.00	< 2.00	51.4	< 2000	< 100	36.3	< 200	< 200	< 2.00	< 2.00	361	< 200	164	157	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200	< 200			
1,2,4-Trimethylbenzene	95-63-6	NS	350	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 100	< 100	18.9	1.15	< 100	< 100	< 1.00	< 1.00	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
1,2-Dichloroethane	107-06-2	5	38	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 100	< 100	< 1.00	< 1.00	< 100	< 100	2.09	2.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
1,3,5-Trimethylbenzene	109-67-8	NS	350	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 100	< 100	18.3	< 1.00	< 100	< 100	< 1.00	< 1.00	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
2-Butanone	78-93-3	NS	21,000	< 100	< 100	< 10.0	< 10.0	< 10.0	< 10.0	< 100	< 1000	< 10.0	< 100	< 100	< 100	< 10.0	< 100	< 1000	< 10.0	< 100	< 1000	< 10.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
Acetone	67-64-1	NS	32,000	< 100	< 100	< 10.0	< 10.0	< 10.0	< 10.0	< 100	< 1000	< 10.0	< 100	< 100	< 100	23.1	< 10.0	< 1000	< 1000	24.7	< 10.0	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000			
Benzene	71-43-2	5	64	< 5.00	< 5.00	< 0.50	< 0.50	< 0.50	< 0.50	< 500	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0				
Carbon Disulfide	75-15-0	NS	3,500	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 100	< 100	1.04	< 1.00	< 100	< 100	5.97	< 1.00	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
Chloroethane	75-00-3	NS	14,000	< 40.0	< 40.0	< 4.00	< 4.00	< 4.00	< 4.00	< 40.0	< 4000	< 4.00	< 4.00	< 4.00	< 4.00	56	5.48	< 400	< 400	4.00	< 4.00	< 400	< 400	< 400	< 400	< 400	< 400	< 400	< 400	< 400			
Chloroform	67-66-3	80	NS	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 100	< 100	1.00	< 1.00	< 100	< 100	1.00	< 1.00	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
Chloromethane	74-87-3	NS	NS	< 30.0	< 30.0	< 3.00	< 3.00	< 3.00	< 3.00	< 30.0	< 300	< 3.00	< 3.00	< 300	< 300	7.00	< 1.00	< 100	< 100	2.51	< 1.00	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
Cymene	99-87-6	NS	NS	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 100	< 100	2.56	< 1.00	< 100	< 100	1.25	< 1.00	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
Ethylbenzene	100-41-4	700	3,500	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 100	< 100	1.25	< 1.00	< 100	< 100	1.25	< 1.00	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
Isopropylbenzene	98-82-8	NS	3,500	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 100	< 100	4.19	< 1.00	< 100	< 100	4.19	< 1.00	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
Naphthalene	91-20-3	NS	700	< 50.0	< 50.0	< 5.00	< 5.00	< 5.00	< 5.00	< 50.0	< 500	< 5.00	< 5.00	< 500	< 500	5.00	< 5.00	< 500	< 500	5.00	< 5.00	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500	< 500			
n-Butylbenzene	104-51-8	NS	1,800	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 100	< 100	3.08	< 1.00	< 100	< 100	1.23	< 1.00	581	605	660	895	842	621	621	621	621	621		
n-Propylbenzene	103-65-1	NS	17,000	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 100	< 100	7.00	< 1.00	< 100	< 100	1.00	< 1.00	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
sec-Butylbenzene	135-98-6	NS	NS	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 100	< 100	2.51	< 1.00	< 100	< 100	0.25	< 1.00	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100			
tert-Butylbenzene	98-06-6	NS	NS	< 10.0	< 10.0	< 1.00	< 1.00	< 1.00	< 1.00	< 10.0	< 1000	< 1.00	< 1.00	< 100	< 100	1.00	< 1.																



**Table 2: Summary of Detected Constituents in Groundwater**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Analyte	CAS-RN	MCL	Iowa DNR	MW-37		MW-38		MW-39		MW-40		MW-41		MW-42		MW-43D				MW-43I		MW-43S		MW-44		MW-45		
				Dec 2012	Mar 2013	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Dec 2012	Dec 2012	Dec 2012	Dec 2012	N	N	N	N	FD										
<b>Extractable Petroleum Hydrocarbons (ug/L)</b>																												
Diesel (C12-C22)	-	NS	NS	< 300	< 300	395	383	< 300	< 300	< 300	< 300	< 288	-	-	-	-	-	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 300		
Gasoline	-	NS	NS	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 288	-	-	-	-	-	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 300			
Motor Oil	-	NS	NS	< 300	< 300	890	726	< 300	< 300	410	< 300	< 288	-	-	-	-	-	< 300	< 300	477	< 300	< 300	< 300	< 300	< 300			
Total Extractable Petroleum Hydrocarbon	-	NS	NS	< 300	< 300	1,280	1,110	< 300	410	< 300	< 288	-	-	-	-	-	< 300	< 300	477	< 300	477	< 300	430	< 300	< 300			
<b>Volatile Organic Compounds (ug/L)</b>																												
Tetrachloroethene	127-18-4	5	1,700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.51	< 1.00	70.3	92.0	< 1.00	32,500	29,000		
Trichloroethene	79-01-6	5	76	1.42	< 1.00	< 1.00	< 1.00	1.03	< 1.00	9.13	4.70	4.65	2.28	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1,040	1,070	< 1.00	6.15	6.27	
cis-1,2-Dichloroethene	156-59-2	70	350	4.14	< 1.00	1.92	8.20	5.09	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Vinyl Chloride	75-01-4	2	10	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,1,1-Trichloroethane	71-55-6	200	70,000	1.64	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.26	< 1.00	2.89	3.05	< 1.00	2.61	2.47		
1,1,2-Trichloroethane	79-00-5	5	61	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,1-Dichloroethane	75-34-3	NS	700	28.1	2.16	314	< 1.00	67.9	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,1,1-Dichloroethene	75-35-4	7	180	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	27.7	26.7	
1,2,4-Trimethylbenzene	95-63-6	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,2-Dichloroethane	107-06-2	5	38	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.41	1.29	
1,3,5-Trimethylbenzene	108-67-8	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
2-Butanone	78-93-3	NS	21,000	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0		
Acetone	67-64-1	NS	32,000	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	11.4	< 10.0	
Benzene	71-43-2	5	64	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.88	0.85	
Carbon Disulfide	75-15-0	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Chloroethane	75-00-3	NS	14,000	< 4.00	< 4.00	7.08	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	
Chloroform	67-66-3	80	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	7.99	3.56	3.41	1.81	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	4.38	4.32
Chloromethane	74-87-3	NS	NS	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	
Cymene	99-87-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Ethylbenzene	100-41-4	700	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.22	1.43
Isopropylbenzene	98-82-8	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Naphthalene	91-20-3	NS	700	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
n-Butylbenzene	104-51-8	NS	1,800	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
n-Propylbenzene	103-65-1	NS	17,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
sec-Butylbenzene	135-98-8	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
tert-Butylbenzene	98-06-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Toluene	108-88-3	1,000	5,000																									

**Table 2: Summary of Detected Constituents in Groundwater  
Former Electrolux Manufacturing Facility  
Jefferson, Iowa**

Note

Method OA-2 and SW8260B results are in micrograms per liter ( $\mu\text{g/l}$ )

mS/cm = millisiemens per centimeter

MS/cm = millisiemens per centimeter

mg/L = milligrams per liter  
MSL = Environmental Protection Agency's Maximum Contaminant Level

MCL = Environmental Protection

**Bold** = Compound exceeds MCL

Total Extractable Petroleum Hydrocarbons are a sum of the three petroleum ranges: diesel, gasoline, and motor oil.

**Table 2: Summary of Detected Constituents in Groundwater**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Analyte	CAS-RN	MCL	Iowa DNR	MW-51		MW-52		MW-53		MW-54		MW-55D		MW-55S		MW-56D		MW-56S		MW-57		MW-58			
				Dec 2012	N	Dec 2012	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Dec 2012	Dec 2012	Mar 2013	Mar 2013	Apr 2014	Jul 2014	Oct 2014	Mar 2013	Mar 2013	Apr 2014	Jul 2014	Oct 2014	Mar 2013	Mar 2013	
<b>Extractable Petroleum Hydrocarbons (ug/L)</b>																									
Diesel (C12-C22)	-	NS	NS	909	1,890	-	< 300	-	-	-	< 300	< 300	< 300	< 313	< 288	< 278	-	-	-	-	< 288	< 288			
Gasoline	-	NS	NS	< 300	< 300	-	< 300	-	-	-	< 300	< 300	< 300	< 313	< 288	< 278	-	-	-	-	< 288	431			
Motor Oil	-	NS	NS	1,440	1,780	-	461	-	-	-	396	482	-	2,050	499	< 288	< 278	-	-	-	-	< 288	365		
Total Extractable Petroleum Hydrocarbon	-	NS	NS	2,350	3,670	-	461	-	-	-	396	482	-	2,050	499	< 288	< 278	-	-	-	-	< 288	796		
<b>Volatile Organic Compounds (ug/L)</b>																									
Tetrachloroethene	127-18-4	5	1,700	< 1.00	< 1.00	< 1.00	7.34	3.8	9.21	7.32	10.8	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Trichloroethene	79-01-6	5	76	2.86	< 1.00	< 1.00	52.3	10.5	10.9	13.8	12.7	< 1.00	1.67	1.36	< 1.00	< 1.00	672	953	865	1,100	853	< 1.00	< 1.00		
cis-1,2-Dichloroethene	156-59-2	70	350	1.15	1.09	1.11	116	108	76.8	93.8	69.9	< 1.00	< 1.00	< 1.00	< 1.00	4.34	7.91	8.11	< 10.0	8.78	< 1.00	< 1.00			
Vinyl Chloride	75-01-4	2	10	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,1,1-Trichloroethane	71-55-6	200	70,000	< 1.00	< 1.00	< 1.00	24.2	22.2	15.4	19.2	10.4	< 1.00	< 1.00	< 1.00	< 1.00	1.22	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,1,2-Trichloroethane	79-00-5	5	61	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,1-Dichloroethane	75-34-3	NS	700	< 1.00	< 1.00	< 1.00	21.8	29.5	18.7	16.7	8.71	< 1.00	< 1.00	< 1.00	< 1.00	4.41	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,1-Dichloroethene	75-35-4	7	180	< 2.00	< 2.00	< 2.00	7.32	7.56	5.36	5.52	2.49	< 2.00	< 2.00	< 2.00	< 2.00	2.64	2.97	< 20.0	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00		
1,2,4-Trimethylbenzene	95-63-6	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,2-Dichloroethane	107-06-2	5	38	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,3,5-Trimethylbenzene	108-67-8	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
2-Butanone	78-93-3	NS	21,000	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0		
Acetone	67-64-1	NS	32,000	< 10.0	< 10.0	< 10.0	57.1	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0		
Benzene	71-43-2	5	64	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
Carbon Disulfide	75-15-0	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Chloroethane	75-00-3	NS	14,000	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00		
Chloroform	67-66-3	80	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.86	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.33	
Chloromethane	74-87-3	NS	NS	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00		
Cymene	99-87-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Ethylbenzene	100-41-4	700	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Isopropylbenzene	98-82-8	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Naphthalene	91-20-3	NS	700	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00		
n-Butylbenzene	104-51-8	NS	1,800	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
n-Propylbenzene	103-65-1	NS	17,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
sec-Butylbenzene	135-98-8	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
tert-Butylbenzene	98-06-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Toluene	108-88-3	1,000	5,000	1.21	3.90	3.44	2.03	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
trans-1,2-Dichloroethene	156-60-5	100	700	< 1.00	< 1.00	< 1.00	5.21	6.5	4.71	4.99	3.06	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.07	1.11	1.11	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Xylenes, Total	1330-20-7	10,000	50,000	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00		
1,4-Dioxane	123-91-1	NS	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
<b>Field Parameters</b>																									
pH	-	NS	NS	6.89	6.83	-	7.09	6.2	7.15	7.04	7.16	7.07	-	7.1	7.91	7.17	7.1	7.07	-	6.97	6.93	7.19	7.15		
Specific conductance (mS/cm)	-	NS	NS	0.704	0.938	-	1.255	0.902	0.768	0.87															

**Table 2: Summary of Detected Constituents in Groundwater**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Analyte	CAS-RN	MCL	Iowa DNR	MW-60		MW-61		MW-62		MW-63		MW-64		
				Mar 2013		Mar 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	
				N	FD	N	N	N	N	N	N	FD	N	N
<b>Extractable Petroleum Hydrocarbons (ug/L)</b>														
Diesel (C12-C22)	-	NS	NS	< 313	< 288	< 278	-	-	-	-	-	-	-	-
Gasoline	-	NS	NS	< 313	360	< 278	-	-	-	-	-	-	-	-
Motor Oil	-	NS	NS	342	< 288	337	-	-	-	-	-	-	-	-
Total Extractable Petroleum Hydrocarbon	-	NS	NS	342	360	337	-	-	-	-	-	-	-	-
<b>Volatile Organic Compounds (ug/L)</b>														
Tetrachloroethene	127-18-4	5	1,700	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Trichloroethene	79-01-6	5	76	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Cis-1,2-Dichloroethene	156-59-2	70	350	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Vinyl Chloride	75-01-4	2	10	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
1,1,1-Trichloroethane	71-55-6	200	70,000	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
1,1,2-Trichloroethane	79-00-5	5	61	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
1,1-Dichloroethane	75-34-3	NS	700	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
1,1-Dichloroethene	75-35-4	7	180	< 2.00	-	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00
1,2,4-Trimethylbenzene	95-63-6	NS	350	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
1,2-Dichloroethane	107-06-2	5	38	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
1,3,5-Trimethylbenzene	108-67-8	NS	350	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
2-Butanone	78-93-3	NS	21,000	< 10.0	-	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Acetone	67-64-1	NS	32,000	< 10.0	-	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Benzene	71-43-2	5	64	< 0.50	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbon Disulfide	75-15-0	NS	3,500	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	1.05	< 1.00	1.08	1.08	1.08
Chloroethane	75-00-3	NS	14,000	< 4.00	-	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00
Chloroform	67-66-3	80	NS	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Chloromethane	74-87-3	NS	NS	< 3.00	-	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00
Cymene	99-87-6	NS	NS	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Ethylbenzene	100-41-4	700	3,500	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Isopropylbenzene	98-82-8	NS	3,500	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Naphthalene	91-20-3	NS	700	< 5.00	-	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
n-Butylbenzene	104-51-8	NS	1,800	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
n-Propylbenzene	103-65-1	NS	17,000	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
sec-Butylbenzene	135-98-8	NS	NS	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
tert-Butylbenzene	98-06-6	NS	NS	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Toluene	108-88-3	1,000	5,000	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
trans-1,2-Dichloroethene	156-60-5	100	700	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Xylenes, Total	1330-20-7	10,000	50,000	< 3.00	-	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00
1,4-Dioxane	123-91-1	NS	1,000	NA	NA	NA	NA	NA	NA	< 2.00	< 2.00	NA	NA	< 2.00
<b>Field Parameters</b>														
pH	-	NS	NS	7.22	-	7.83	8.63	7.79	7.24	7.37	7.17	6.69	6.88	7.19
Specific conductance (mS/cm)	-	NS	NS	0.809	-	0.547	0.549	0.701	0.821	1.062	0.657	0.757	0.692	1.084
Temperature (Degrees Celsius)	-	NS	NS	8.75	-	11.33	12.33	14.74	14.2	12.7	15.64	15.3	13.5	15.86
ORP (millivolts)	-	NS	NS	105.5	-	-43.6	34.9	25.8	-97.5	44.4	62.9	-53.9	-115.3	156.3
DO (mg/L)	-	NS	NS	4.75	-	0.66	5.37	0.47	0.2	3.39	1.33	0.64	0.3	7.46

## Notes:

Method OA-2 and SW8260B results are in micrograms per liter (ug/L).

mS/cm = millisiemens per centimeter

mg/L = milligrams per liter

MCL = Environmental Protection Agency's Maximum Contaminant Level

Bold = Compound exceeds MCL

Total Extractable Petroleum Hydrocarbons are a sum of the three petroleum ranges: diesel, gasoline, and motor oil.

NS = No standard

NA = Not analyzed

NR = Not recorded

N = normal sample

FD = field duplicate sample

**Table 2: Summary of Detected Constituents in Groundwater  
Former Electrolux Manufacturing Facility  
Jefferson, Iowa**

Analyte	CAS-RN	MCL	Iowa DNR	MW-65												MW-66				MW-67							
				Oct 2013			Apr 2014		Jul 2014		Oct 2014			Dec 2014		Mar 2015		Jul 2016		Nov 2015		Jul 2016		Nov 2015		Jul 2016	
				N	N	N	N	FD	N	FD	N	FD	N	FD	N	FD	N	FD	N	FD	N	FD	N	FD	N	FD	
<b>Extractable Petroleum Hydrocarbons (ug/L)</b>																											
Diesel (C12-C22)	-	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Gasoline	-	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Motor Oil	-	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total Extractable Petroleum Hydrocarbon	-	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>Volatile Organic Compounds (ug/L)</b>																											
Tetrachloroethene	127-18-4	5	1,700	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
Trichloroethene	79-01-6	5	76	<1.00	2.42	44.7	826	799	1,730	1,530	2,370	2,360	2,420	3.94	6.38	5.79	0.90	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
cis-1,2-Dichloroethene	156-59-2	70	350	<1.00	1.27	2.17	17.1	14.5	22.9	20.8	29.7	28.1	61.3	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
Vinyl Chloride	75-01-4	2	10	<1.00	<1.00	<1.00	<1.00	<1.00	1.41	1.32	1.89	1.9	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
1,1,1-Trichloroethane	71-55-6	200	70,000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
1,1,2-Trichloroethane	79-00-5	5	61	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
1,1-Dichloroethane	75-34-3	NS	700	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
1,1-Dichloroethene	75-35-4	7	180	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00			
1,2,4-Trimethylbenzene	95-63-6	NS	350	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
1,2-Dichloroethane	107-06-2	5	38	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
1,3,5-Trimethylbenzene	108-67-8	NS	350	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
2-Butanone	78-93-3	NS	21,000	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0			
Acetone	67-64-1	NS	32,000	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0			
Benzene	71-43-2	5	64	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.736	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Carbon Disulfide	75-15-0	NS	3,500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
Chloroethane	75-00-3	NS	14,000	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00			
Chloroform	67-66-3	80	NS	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	2.16	2.05	<1.00	<1.00			
Chloromethane	74-87-3	NS	NS	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00			
Cymene	99-67-6	NS	NS	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
Ethylbenzene	100-41-4	700	3,500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
Isopropylbenzene	98-82-8	NS	3,500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
Naphthalene	91-20-3	NS	700	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00			
n-Butylbenzene	104-51-8	NS	1,800	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
n-Propylbenzene	103-65-1	NS	17,000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
sec-Butylbenzene	135-98-8	NS	NS	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
tert-Butylbenzene	98-06-5	NS	NS	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
Toluene	108-88-3	1,000	5,000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
trans-1,2-Dichloroethene	156-60-5	100	700	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	1.99	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00			
Xylenes, Total	1330-20-7	10,000	50,000	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00			
1,4-Dioxane	123-91-1	NS	1,000	<2.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
<b>Field Parameters</b>																											
pH	-	NS	NS	7.15	6.98	6.92	7.02	-	7.20	-	6.69	-	6.87	6.58	6.79	-	7.11	-	6.88	-	-	-	-	-	-		
Specific conductance (mS/cm)	-	NS	NS	1.286	0.777	0.912	0.94	-	0.951	-	0.998	-	0.955	0.755	0.845	-	0.891	-	0.96	-	-	-	-	-	-		
Temperature (Degrees Celsius)	-	NS	NS	16.27	15.9	17.73	16.3	-	5.63	-	3.58	-	19.71	12.13	13.91	-	12.56	-	13.87	-	-	-	-	-	-		
ORP (millivolts)	-	NS	NS	-50.1	-212.4	-65.5	-67.2	-	-4	-	-67	-	-32.8	-92.3	62.7	-	-28.7	-	-4.4	-	-	-	-	-	-		
DO (mg/L)	-	NS	NS	2.47	0.23	1.57	NA	-	0.0	-	0.0	-	0.63	3.46	0.58	-	4.71	-	0.47	-	-	-	-	-	-		

Prepared by: TG B  
Checked by: JMR  
Reviewed by: APTM

**Table 3: Summary of Slug Test Data**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Unit	Well	Date	Screened Interval (ft bgs)	Type	Test Duration	Hvorslev Method		Bouwer and Rice Method		Hvorslev/Bouwer and Rice Geometric Mean	
						cm/sec	ft/day	cm/sec	ft/day	cm/sec	ft/day
Oxidized Brown Till	MW-05	5/2/2012	4 to 9	Manual	7 hours	1.00E-05	2.84E-02	6.73E-06	1.91E-02		
	MW-06	5/1/2012	5 to 10	Manual	30 hours	1.80E-07	5.11E-04	1.37E-07	3.89E-04		
	MW-09	5/1/2012	7 to 12	Manual	30 hours	9.03E-08	2.56E-04	8.18E-08	2.32E-04		
	MW-11	4/30/2012	3 to 13	Manual	24 hours	1.17E-07	3.32E-04	8.89E-08	2.52E-04		
	MW-15	4/30/2012	3 to 13	Manual	21 hours	2.12E-06	6.01E-03	1.42E-06	4.03E-03		
	Average - Undisturbed Upper Till:					2.51E-06	7.11E-03	1.69E-06	4.80E-03	2.06E-06	5.84E-03
	MW-22	5/24/2012	2 to 12	Transducer	10 minutes	1.55E-03	4.38E+00	9.86E-04	2.80E+00		
		5/24/2012		Transducer	10 minutes	1.76E-03	4.99E+00	1.13E-03	3.19E+00		
	Average - Disturbed Till MW-22:					1.65E-03	4.69E+00	1.06E-03	2.99E+00	1.32E-03	3.75E+00
	MW-23	5/24/2012	2 to 12	Manual	1 hour	3.07E-04	8.70E-01	9.88E-05	2.80E-01		
		5/24/2012		Transducer	30 minutes	6.64E-04	1.88E+00	4.82E-04	1.37E+00		
		5/24/2012		Transducer	30 minutes	6.35E-04	1.80E+00	4.52E-04	1.28E+00		
	Average - Disturbed Till MW-23:					5.35E-04	1.52E+00	3.44E-04	9.76E-01	4.29E-04	1.22E+00
Unoxidized Gray Till	MW-25D	12/11/2012	24 to 29	Manual	48 hours	3.88E-08	1.10E-04	3.50E-08	9.91E-05		
	MW-30	12/11/2012	21 to 26	Manual	48 hours	2.12E-08	6.00E-05	1.85E-08	5.25E-05		
	Average - Gray Till:					3.00E-08	8.49E-05	2.67E-08	7.58E-05	2.83E-08	8.02E-05
	Yellow-Brown Till	MW-43D	12/10/2012	36 to 41	Transducer	24 hours	2.92E-05	8.26E-02	3.01E-05	8.53E-02	
		MW-46	12/11/2012	36 to 41	Transducer	1 hour	1.80E-04	5.09E-01	1.75E-04	4.97E-01	
		10/9/2013	32 to 37	Transducer	2.5 hours	5.15E-04	1.46E+00	4.73E-04	1.34E+00		
		10/9/2013	32 to 37	Transducer	2.5 hours	1.86E-04	5.27E-01	1.53E-04	4.33E-01		
		10/9/2013	34 to 39	Transducer	3 hours	5.14E-05	1.46E-01	4.68E-05	1.33E-01		
		10/9/2013	34 to 39	Transducer	3 hours	5.77E-05	1.64E-01	5.37E-05	1.52E-01		
		MW-66	11/10/2015	45 to 55	Manual	45 minutes	2.21E-05	6.27E-02	1.67E-05	4.73E-02	
	Average - Yellow Brown Till (coarse grained)					1.49E-04	4.21E-01	1.35E-04	3.84E-01	1.42E-04	4.02E-01
Dark Gray Till	MW-56D	10/11/2013	33 to 38	Transducer	7 hours	4.18E-06	1.19E-02	3.66E-06	1.04E-02		
		10/11/2013	33 to 38	Transducer	7 hours	7.18E-06	2.04E-02	6.34E-06	1.80E-02		
	MW-61	10/11/2013	34 to 39	Transducer	5 hours	3.86E-06	1.09E-02	4.20E-06	1.19E-02		
Average - Yellow Brown Till (fine grained)						5.07E-06	1.44E-02	4.73E-06	1.34E-02	4.90E-06	1.39E-02
MW-62 (fine-grained)	10/8/2013	67 to 72	Transducer	20 hours	4.86E-06	1.38E-02	4.69E-06	1.33E-02			
MW-63 (coarse-grained)	10/8/2013	67 to 72	Transducer	2 hours	8.26E-05	2.34E-01	6.86E-05	1.94E-01			
Average - Dark Gray Till						5.70E-05	1.62E-01	4.86E-05	1.37E-01	5.26E-05	1.49E-01

Notes:

ft/day = feet per day

cm/sec = centimeters per second

ft bgs = feet below ground surface

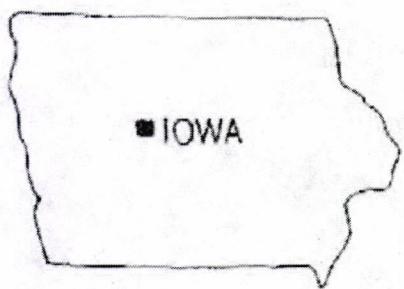
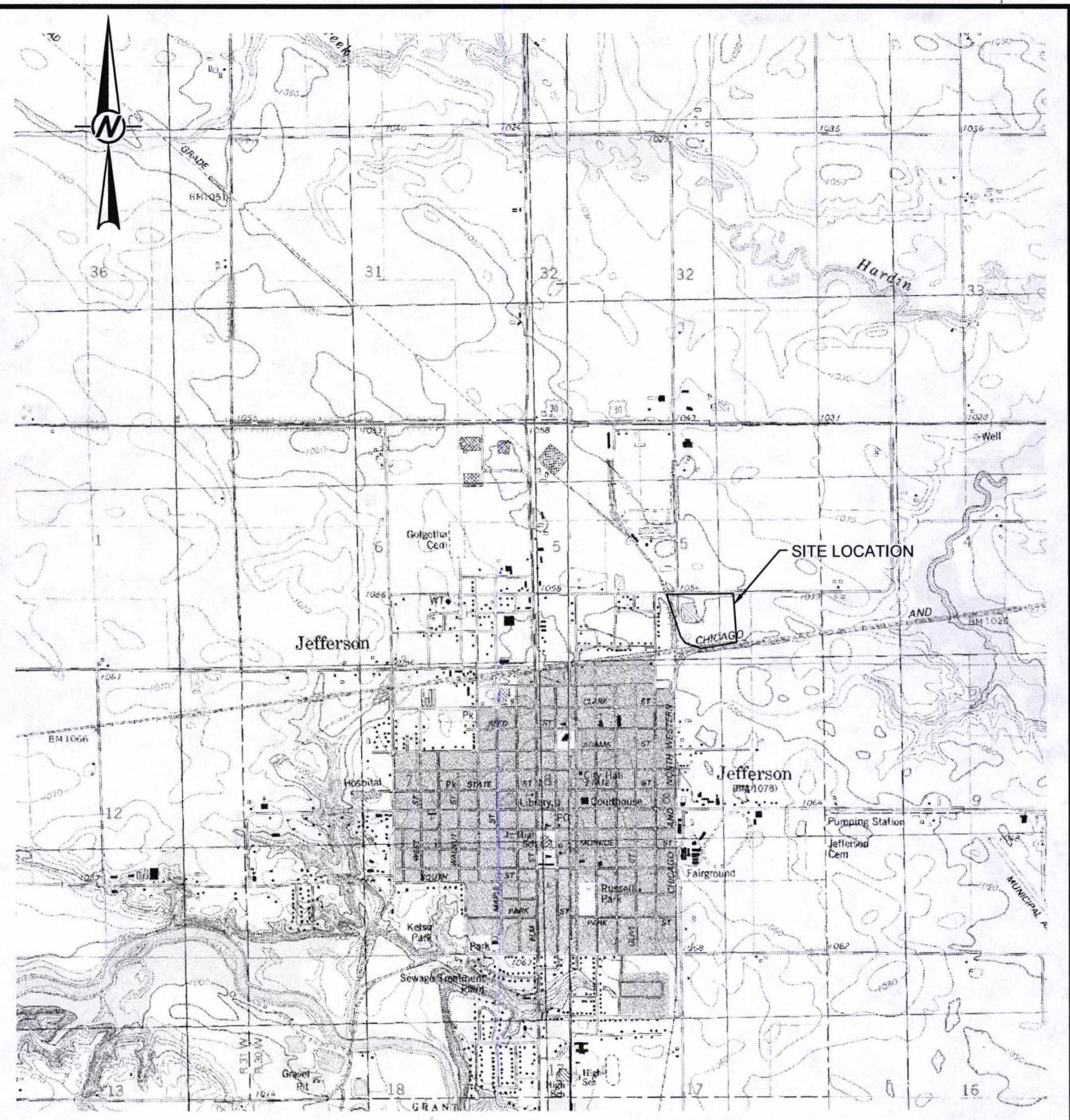
Prepared by: ATK

Checked by: TGB

Reviewed by: APTM



## **FIGURES**



## REFERENCE

Base maps taken from U.S.G.S map titled, "East Jefferson, Iowa" and "West Jefferson, Iowa", dated 1986.

PROJECT

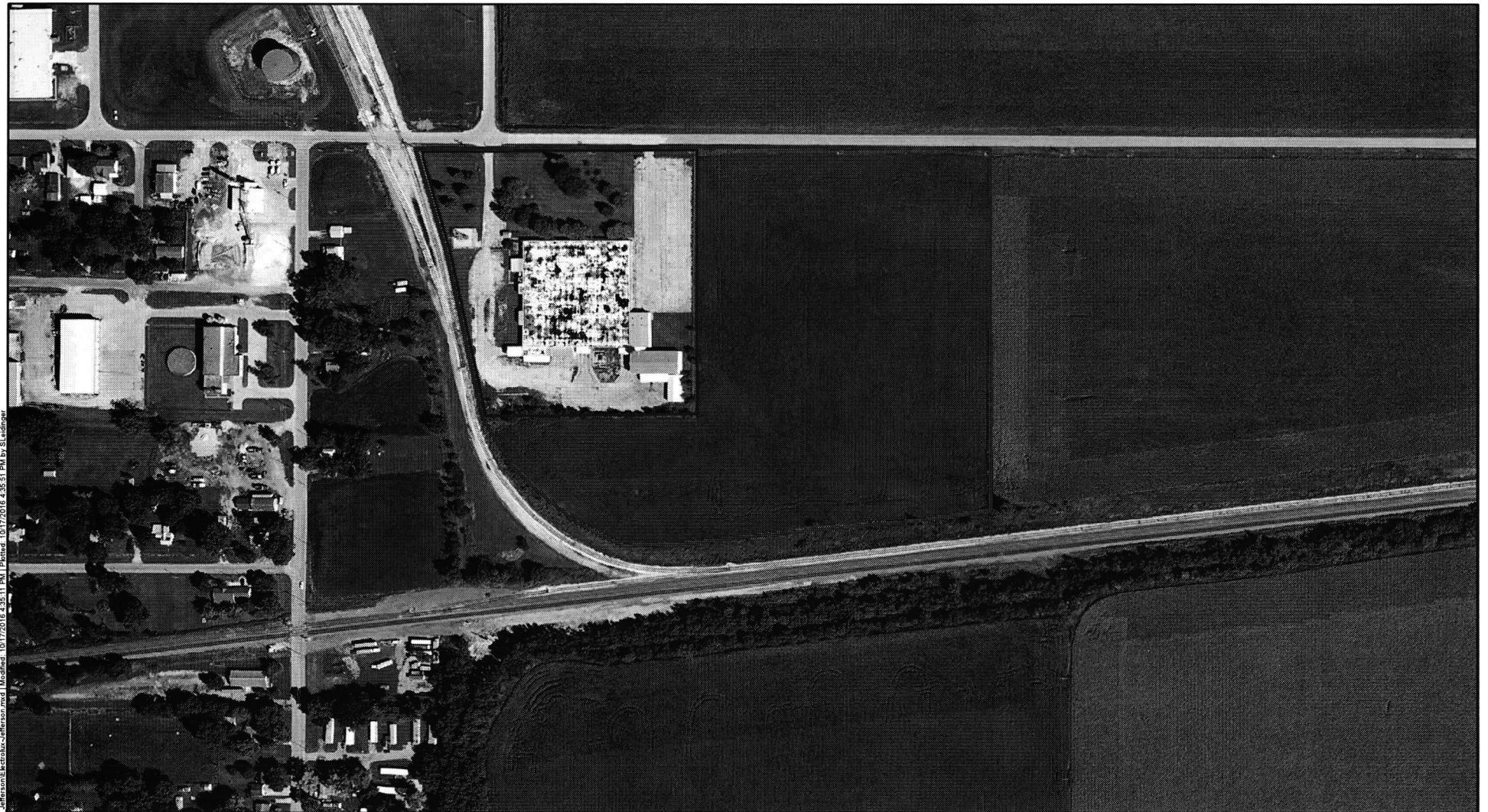
ELECTROLUX HOME PRODUCTS  
JEFFERSON, IOWA

TITLE

## **SITE LOCATION MAP**



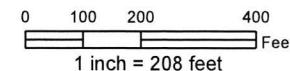
 <b>Golder Associates</b>	PROJECT No.	103-87305	FILE No.	10387305M001
	DESIGN	JSP	2016-10-03	SCALE
	CADD	RWC	2016-10-03	AS SHOWN
	CHECK	ATK	2016-10-17	FIGURE
	REVIEW	APTM	2016-10-17	1



LEGEND	
—	Approximate Site Property Boundary
—	Former Manufacturing Area
REFERENCES	
1. Imagery of Jefferson Iowa taken from the United States Department of Agriculture - Farm Service Agency, 2009 National Agriculture Imagery Program. Photo Date: 2010.	
2. North American Datum 1983 Iowa State Plane North in Feet	

#### FIGURE NARRATIVE

This figure shows the approximate site property boundary and developed portion of the site. The site property boundary is an approximation and has not been surveyed by a licensed surveyor.



FILE No.	Electrolux_Jefferson	SCALE	AS SHOWN
PROJECT No.	103-87305	DATE	10/17/2016
	REV. 0	DESIGN	CDS
		CHECK	ATK
		REVIEW	APTM

#### Site Vicinity Map

Electrolux Home Products - Jefferson, IA

FIGURE 2



#### LEGEND

- Interpreted TCE Iso-concentration contour (ug/L)
- Approximate Site Property Boundary
- Former Manufacturing Area
- Approximate Groundwater Flow Direction

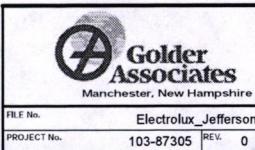
#### REFERENCES

1. Imagery of Jefferson Iowa taken from the United States Department of Agriculture - Farm Service Agency, 2009 National Agriculture Imagery Program. Photo Date: 2010.
2. North American Datum 1983 Iowa State Plane North in Feet

#### FIGURE NARRATIVE

This figure shows the approximate site property boundary, developed portion of the site, approximate groundwater flow direction and interpreted TCE isoconcentration contours for wells screened in upper till units. The site property boundary is an approximation and has not been surveyed by a licensed surveyor.

0 50 100 200  
Feet  
1 inch = 100 feet



SCALE	AS SHOWN
DATE	01/17/2017
DESIGN	CDS
GIS	SHL
CHECK	JSP
REVIEW	APTM

Interpreted TCE  
Isoconcentration Contours for  
Wells Screened in Upper Till Units

Electrolux Home Products - Jefferson, IA FIGURE 3



#### LEGEND

- Interpreted Cis-1,2 DCE Iso-concentration contour (ug/L)
- Former Manufacturing Area
- Approximate Site Property Boundary
- Approximate Groundwater Flow Direction

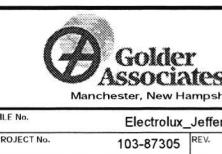
#### REFERENCES

1. Imagery of Jefferson Iowa taken from the United States Department of Agriculture - Farm Service Agency, 2009 National Agriculture Imagery Program. Photo Date: 2010.
2. North American Datum 1983 Iowa State Plane North in Feet

#### FIGURE NARRATIVE

This figure shows the approximate site property boundary, developed portion of the site, approximate groundwater flow direction and interpreted Cis-1,2 DCE isoconcentration contours for wells screened in upper till units. The site property boundary is an approximation and has not been surveyed by a licensed surveyor.

0 50 100 200  
1 inch = 100 feet



FILE No.	Electrolux_Jefferson	SCALE AS SHOWN
PROJECT No.	103-87305 REV. 0	DATE 01/17/2017
		DESIGN CDS
		GIS SHL
		CHECK JSP
		REVIEW APTM

Interpreted CIS-1,2 DCE  
Isoconcentration Contours for  
Wells Screened in Upper Till Units

Electrolux Home Products - Jefferson, IA FIGURE 4



LEGEND	
Interpreted TCE Concentration Contour (ug/L)	
Approximate Site Property Boundary	
Former Manufacturing Area	
Approximate Groundwater Flow Direction	

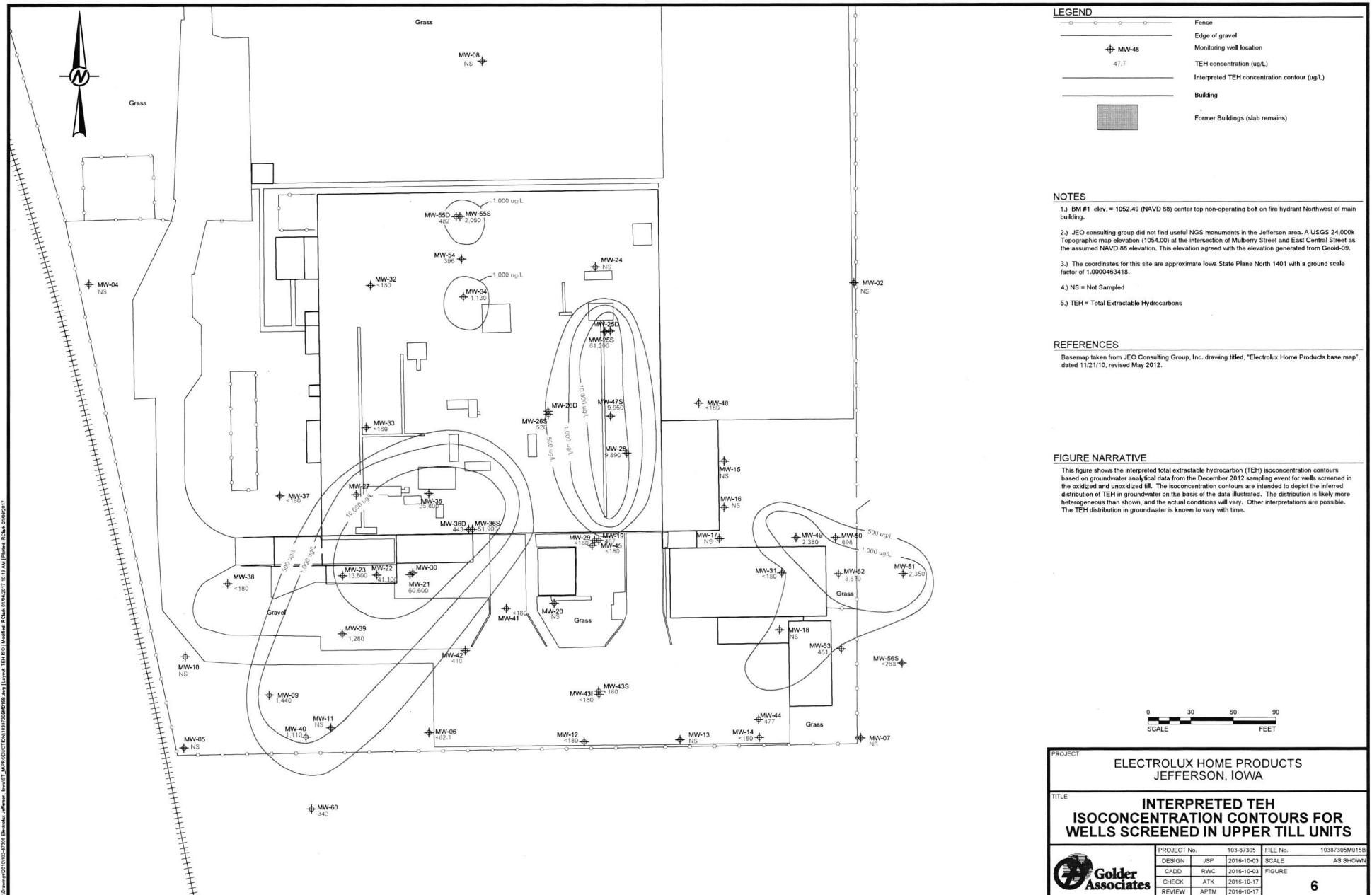
REFERENCES	
1. Imagery of Jefferson Iowa taken from the United States Department of Agriculture - Farm Service Agency, 2009 National Agriculture Imagery Program. Photo Date: 2010.	
2. North American Datum 1983 Iowa State Plane North in Feet	

#### FIGURE NARRATIVE

This figure shows the approximate site property boundary, developed portion of the site, approximate groundwater flow direction and interpreted TCE in groundwater yellow-brown till. The site property boundary is an approximation and has not been surveyed by a licensed surveyor.

0 50 100 200  
1 inch = 100 feet

 <b>Golder Associates</b> Manchester, New Hampshire	SCALE AS SHOWN DATE 01/17/2017 DESIGN CDS GIS SHL CHECK JSP PROJECT No. 103-87305 REV 0 REVIEW APTM	<b>Interpreted TCE in Groundwater Yellow-Brown Till</b> <b>Electrolux Home Products - Jefferson, IA</b>	<b>FIGURE 5</b>
--	--	--	-----------------



DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

**Environmental Indicator (EI)**

**Migration of Contaminated Groundwater Under Control**

**Facility Name:** Former Electrolux Home Products Inc. Facility  
**Facility Address:** 601 East Central Street, Jefferson, IA

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media been **considered** in this EI determination?

X \_\_\_\_\_ If yes - check here and continue with #2 below. If no - re-evaluate existing data, or  
\_\_\_\_\_ if data are not available, skip to #8 and enter "IN" (more information needed) status code.

**BACKGROUND**

**Definition of Environmental Indicators**

Environmental Indicators (EI) are measures to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater.

**Definition of "Migration of Contaminated Groundwater Under Control" EI**

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" at or from the identified facility (i.e., site-wide)).

**Relationship of EI to Final Remedies**

The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

## **Migration of Contaminated Groundwater Under Control**

### **Environmental Indicator (EI)**

Page 2

2. Is **groundwater** known or reasonably suspected to be "**contaminated**"<sup>1</sup> above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases anywhere at, or from, the facility?

- If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.
- If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."
- If unknown - skip to #8 and enter "IN" status code.

#### **Rationale and Reference(s):**

The former Electrolux Home Products, Inc. (Electrolux) manufacturing facility is located at 601 East Central Street in Jefferson, Greene County, Iowa (Site) (see Figure 1). The approximately 20.75 acre Site was previously improved by a 75,542 square-foot single-story former manufacturing/office/warehouse building constructed in 1960, with additions constructed in 1973, 1984, 1988, and 1992. The area of the Site formerly used for manufacturing operations encompasses approximately 7.5 acres of the 20.75-acre property owned by Electrolux (herein referred as the "facility" or "former manufacturing area"). The remainder of the property, south and east of the facility, has historically been leased for agricultural use (see Figure 2). Electrolux terminated the agricultural leases for these areas.

The Site was developed in 1960 to manufacture dishwasher motor transmissions. Electrolux closed the facility in March 2011, decommissioned and removed the manufacturing equipment and other items from the facility buildings, and demolished the buildings. The concrete building slabs, parking areas, chain-link fence, and sidewalks are still in place.

In 2010, Electrolux commissioned Golder Associates Inc. (Golder) to review the Site history and develop an environmental assessment plan to evaluate subsurface conditions downgradient and exterior of the facility buildings as part of facility closure activities. Electrolux then voluntarily assessed Site subsurface conditions using a phased approach. The assessment activities included the installation of 71 monitoring wells to assess groundwater elevations and quality (see Figure 3). Golder completed assessment activities between 2010 and 2016, which are summarized in Golder's Site Assessment Summary Report, dated October 2016 and pertinent included as references herein.

Based on assessment activities, Site geology includes approximately 89 feet of till overlying the Pleistocene Sand and Gravel Unit (see Figure 4). The Site geology matches the information provide in the IDNR databases and literature review. All of the units, except the coarse-grained yellow-brown till and the Pleistocene Sand and Gravel Unit are best characterized as aquitards.

Groundwater flow direction across the Site in the yellow-brown till is towards the south/southeast (See Figure 5). Groundwater flow in the upper tills is limited due to the low permeability and heterogeneous nature of the till units. Hydraulic conductivity in the yellow-brown till coarse-grained materials is typically one to two orders of magnitude higher than the surrounding unoxidized (overlying) and dark gray (underlying) tills. The rate and volume of groundwater flow in the aquitards is low based on hydraulic conductivity values calculated for these units. Vertical hydraulic conductivity in these tills are usually lower than horizontal hydraulic conductivity values.

Footnotes:

<sup>1</sup>Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses)

## **Migration of Contaminated Groundwater Under Control**

### **Environmental Indicator (EI)**

Page 3

Electrolux used the following "levels" for screening and making the current determination of groundwater "contamination" status:

- United States Environmental Protection Agency's (USEPA) Maximum Contaminant Levels (MCLs)
- Iowa Department of Natural Resources (IDNR) groundwater standards for Non-Protected Groundwater Source

The most frequently detected compounds above USEPA's MCLs are trichloroethylene (TCE) and its associated degradation product, cis-1,2-dichloroethene (cis-1,2-DCE). VOCs detected less frequently and/or at lower concentrations include additional breakdown products of TCE and 1,1,1-trichloroethane (TCA) and 1,4-dioxane, a solvent stabilizer. Electrolux has also observed the presence of light non-aqueous phase liquid (LNAPL) in two monitoring wells on-Site. Detections exceeding either the MCL or IDNR levels were found for:

- Trichloroethene: 32 out of 71 wells sampled (approximately 45% of wells)
- Tetrachloroethene: 9 out of 71 wells sampled (approximately 13% of wells)
- cis-1,2-Dichloroethene: 14 out of 71 wells sampled (approximately 20% of wells)
- Vinyl Chloride: 15 out of 71 wells sampled (approximately 21% of wells)
- 1,1,1-Trichloroethane: 2 out of 71 wells sampled (approximately 3% of wells)
- 1,1,2-Trichloroethane: 2 out of 71 wells sampled (approximately 3% of wells)
- 1,1-Dichloroethene: 10 out of 71 wells sampled (approximately 14% of wells)
- 1,2-Dichloroethane: 2 out of 71 wells sampled (approximately 3% of wells)
- trans-1,2-Dichloroethene: 5 out of 71 wells sampled (approximately 7% of wells)

Groundwater analytical results are summarized in Tables 1 through 4. The distribution of VOCs in groundwater is illustrated in the following figures:

- Figure 6: TCE in the upper tills (i.e., oxidized brown and unoxidized gray tills), respectively
- Figure 7: cis-1,2-DCE in the upper tills
- Figure 8: 1,4-dioxane in the upper tills
- Figure 9: TCE in the yellow-brown till
- Figures 10 and 11: cross-sectional views of TCE
- Figure 12: TEH in the upper tills

Key findings include the following:

- The highest TCE concentrations in groundwater occur in the upper tills in the area around the former concrete steel-lined trench on the eastern portion of former Building 1 and just to the south of this area outside of the former building (see Figure 6). Detected concentrations attenuate rapidly horizontally downgradient of this area and generally reach non-detect levels along the southern facility boundary. TCE has not been detected above the MCL of five micrograms per liter (ug/L) in samples from wells screened in the upper tills located along the facility boundary line (the Electrolux property boundary is located another 300 feet south of the facility boundary).
- The horizontal distribution of cis-1,2-DCE impacted groundwater is similar to TCE except that it extends further to the west beneath former Building 1 (see Figure 7). At many

## **Migration of Contaminated Groundwater Under Control**

### **Environmental Indicator (EI)**

Page 4

sample locations (e.g., MW-25S, MW-28, MW-31, and MW-53) the concentration of cis-1,2-DCE is two or more times greater than the concentration of parent compound, TCE. This indicates that significant natural degradation of TCE is occurring within Site groundwater. The larger areal extent of cis-1,2-DCE suggests that some areas formerly impacted by TCE may have fully degraded to cis-1,2-DCE.

- The laboratory detected 1,4-dioxane in three (MW-25S, MW-28, and MW-53) of the 18 groundwater samples collected during the October 2013 sampling event. Detected concentrations ranged from 144 ug/L to 618 ug/L (see Figure 8). Laboratory reporting limits for 1,4-dioxane varied by sample depending on the concentration of other compounds (e.g., elevated TCE concentrations resulted in higher 1,4-dioxane reporting limits). EPA does not have an MCL for 1,4-dioxane. However, IDNR has 1,4-dioxane Statewide Standard for a Non-Protected Groundwater Source of 1,000 ug/L. The till units at the Site meet IDNR's definition of a Non-Protected Groundwater Source. All detected 1,4-dioxane concentrations and reporting limits for non-detect samples are below the Non-protected Groundwater Source Standard.
- TCE impacts extend into the yellow-brown till beneath the area of highest TCE impact. The downgradient extent of TCE impacts in the yellow-brown till extends to MW-64 and MW-66, a well pair screened in the yellow-brown till located south of the facility, but still on the Electrolux property. TCE in the groundwater samples collected from MW-64 decreased from 196 ug/l in October 2013 to non-detect in July and October 2014 (see Table 1). TCE concentrations in samples collected from MW-66 (screened below MW-64 in the yellow-brown till) ranged from 3.94 ug/l to 6.38 ug/l in November 2015 and July 2016, respectively. These data indicate that VOC concentrations attenuate downgradient and do not extend beyond the Electrolux property line located approximately 250 feet further downgradient of MW-64/MW-66 (see Figure 9).
- Except for one detection of TCE (1.1 ug/L) in a sample collected from MW-62, no Site-related VOCs have been detected at concentrations above the laboratory reporting limits in groundwater samples collected from monitoring wells MW-62 and MW-63 screened in the dark gray till.
- TCE concentrations in samples collected from monitoring well MW-65 (screened in the dark gray till) increased from non-detect in October 2013 to 2,370 ug/l in March 2015. TCE was detected at a concentration of 2,420 ug/L in July 2016, indicating that TCE concentrations in MW-65 appear to have stabilized. Detected concentrations of other VOCs (i.e., cis-1,2-DCE and vinyl chloride) in all samples collected from MW-65 are below their respective MCLs. The apparent stabilized concentration of TCE in MW-65 is an order of magnitude lower than samples collected from MW-47D (screened in the overlying yellow-brown till unit), indicating significant attenuation of VOCs with depth in the gray till beneath the source area (see Figures 10 and 11).
- No Site-related VOCs have been detected at concentrations above the laboratory reporting limit in groundwater samples collected from monitoring well MW-67 screened in the Pleistocene Sand and Gravel unit. Groundwater impacts from the Site do not extend to the Pleistocene Sand and Gravel Unit.
- The horizontal distribution of TEH includes three distinct areas of petroleum impacts as shown in Figure 12. Based on the screening and analytical data (see Table 2), the petroleum is associated with a cutting or machining oils.

**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI)**

Page 5

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"<sup>2</sup> as defined by the monitoring locations designated at the time of this determination)?

- If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination").
- If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination") - skip to #8 and enter "NO" status code, after providing an explanation.
- If unknown - skip to #8 and enter "IN" status code.

**Rationale and Reference(s):**

As indicated above, the presence of cis-1,2-DCE and other TCE degradation products (e.g., vinyl chloride) in groundwater indicates that significant natural attenuation of VOCs is occurring. From October 2013 to March 2015, Golder submitted groundwater samples for an expanded list of parameters to further confirm that natural degradation of CVOCs is occurring and to identify the conditions and processes responsible for the degradation (see Table 3).

Table 4 provides a summary of key CVOC concentrations, dissolved gas concentrations, ORP, and DO concentrations in samples collected from upgradient, near source, and downgradient monitoring wells. Key findings from these data include the following:

- Sampling results indicate that DO concentrations in the areas most impacted with TCE in the upper till units are generally below 1 mg/l. DO concentrations in the yellow-brown till are also low, ranging from 0.0 mg/l to 0.58 mg/l. The low dissolved oxygen concentrations in the upper tills and yellow-brown till are conducive to anaerobic biological degradation of the more highly-chlorinated VOCs.
- Low ORP values (i.e., less than 100 mv) indicate that reducing (anaerobic) conditions, conducive to biologically-mediated reductive chlorination exist in groundwater over most of the facility. In the most impacted areas, ORP values are typically negative, indicating strongly-reducing conditions.
- The laboratory detected dissolved gases methane, ethane, and ethene at concentrations above the laboratory reporting limits in all 18 groundwater samples collected in October 2013. The following summarizes the dissolved gases analytical results:
  - Methane concentrations ranged from 0.3 ug/L (MW-24) to 2,900 ug/L (MW-25S). The highest concentrations of methane were detected in the groundwater samples collected from the upper till (oxidized brown and unoxidized gray) and yellow-brown till in the area of the former eastern steel-lined trench (MW-25S, MW-28, MW-31, MW-46, and MW-47D). The high concentrations of methane indicate a high level of biological reduction activity.

**Footnotes:**

<sup>2</sup> "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

## Migration of Contaminated Groundwater Under Control

### Environmental Indicator (EI)

Page 6

- Ethene concentrations ranged from 0.026ug/L (MW-53) to 1,600 ug/L (MW-28). The highest concentrations of ethene were detected in the groundwater samples collected from the upper till (oxidized brown and unoxidized gray) and yellow-brown till in the former eastern steel-lined trench area (MW-19, MW-25S, MW-28, and MW-47D). The presence of ethene in groundwater indicates that the chlorinated ethenes (e.g., TCE, 1,2-DCE, vinyl chloride) are completely degrading to non-toxic byproducts.
- Ethane concentrations ranged from 0.025 ug/L (MW-57) to 4 ug/L (MW-19). The presence of ethane in groundwater indicates that the chlorinated ethanes (e.g., 1,1,1-TCA, chloroethane, and 1,1-dichloroethane) are completely degrading to non-toxic byproducts.
- TOC concentrations ranged from 2 to 518 mg/L with most results in the 2 mg/l to 7 mg/l range. These concentrations are moderate to high indicating that sufficient substrate exists to support microbial activity. Additionally, petroleum-impacted soil and groundwater is present near the eastern steel-lined trench, which may provide a nutrient source for microbes to degrade VOCs in the most impacted area.

In summary, the analytical results for DO, ORP, and dissolved gases confirm that significant natural attenuation is occurring. TOC concentrations indicate that sufficient substrate exists to support microbial activity. Petroleum-impacted groundwater also increases TOC and may also support the natural degradation of CVOCs in groundwater by providing a nutrient source for the microbes. These data suggest that CVOC-concentrations should decrease over time and that the plume appears to be stable.

Overall, CVOC concentrations in groundwater have remained stable or decreased (e.g., MW-64 and MW-66). The highest CVOC concentrations are detected in the upper 30 feet of till and decrease vertically by several orders of magnitude. The extent of CVOC-impacted groundwater is limited to the former manufacturing area and does not extend off-Site. The Pleistocene Sand and Gravel Unit has not been impacted.

#### 4. Does "contaminated" groundwater **discharge** into surface waterbodies?

- If yes - continue after identifying potentially affected surface water bodies.
- If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.
- If unknown - skip to #8 and enter "IN" status code.

#### Rationale and Reference(s):

No surface water bodies exist on or near the Site.

#### 5. Is the **discharge** of "contaminated" groundwater into surface water likely to be "**insignificant**" (i.e., the maximum concentration<sup>4</sup> of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

- If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentrations of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable

## **Migration of Contaminated Groundwater Under Control**

### **Environmental Indicator (EI)**

Page 7

impacts to the receiving surface water, sediments, or eco-system.

       If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration<sup>3</sup> of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations' greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

       If unknown - enter "IN" status code in #8.

#### **Rationale and Reference(s):**

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented<sup>5</sup>)?

       If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR

2) providing or referencing an interim-assessment<sup>6</sup>, appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

       If no - (the discharge of "contaminated" groundwater can not be shown to be "currently acceptable") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

       If unknown - skip to 8 and enter "IN" status code.

#### **Rationale and Reference(s):**

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) **dimensions** of the "existing area of contaminated groundwater?"

If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations that will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI)**  
Page 8

- If no - enter "NO" status code in #8.  
 If unknown - enter "IN" status code in #8.

**Rationale and Reference(s):**

Future planned activities will include:

- Develop a monitoring-only remedial plan including:
  - Assess groundwater quality on a semi-annual basis (April and September)
  - Collect groundwater samples from 22 monitoring locations (wells screened in the upper tills, yellow-brown till, and Pleistocene Sand and Gravel Unit) to monitor the horizontal and vertical extent of the impacted groundwater
  - Analyze the groundwater samples for VOCs and monitored natural attenuation parameters to assess trends and confirm the plume is stable and/or decreasing

Electrolux has developed a long-term groundwater monitoring program as part of a monitoring natural attenuation program. The goal of the program is to verify that the lateral and vertical extent of the contaminated area is stable and to document trends in concentrations across the Site over time. A summary of the monitoring plan including a list of the 22 monitoring locations, analytical parameters, and frequency is included in Attachment A. Electrolux will collect the samples in accordance with the Standard Operating Procedures provided in the Work Plan for Supplemental Soil and Groundwater Assessment (Golder, January 2012).

8. Check the appropriate status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750)

YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Electrolux Inc – Jefferson, IA facility located at 601 East Central Street, Jefferson, IA. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater". This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

NO - Unacceptable migration of contaminated groundwater is observed or expected.

IN - More information is needed to make a determination.

Locations where References may be found:

Final Site Assessment Summary Report, Golder Associates Inc., October 2016

---

**MIGRATION OF CONTAMINATED GROUNDWATER  
UNDER CONTROL (CA750)**

## **TABLES**

**Table 1: Summary of Detected Constituents in Groundwater  
Former Electrolux Manufacturing Facility  
Jefferson, Iowa**

Analyte	CAS-RN	MCL	Iowa DNR	MW-5		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-13		MW-14			
				Apr 2011	Apr 2011	Apr.2011	Dec 2012	Apr 2014	Jul 2014	Oct 2014	Apr 2011	Dec 2012	May 2012	Dec 2012	Apr 2011	Dec 2012	May 2012	Dec 2012							
<b>Extractable Petroleum Hydrocarbons (ug/L)</b>																									
Diesel (C12-C22)	-	NS	NS	< 300	< 300	< 300	-	-	-	-	1,390	< 300	< 300	-	359	-	360	< 300	< 300	-	790	< 300	-	< 300	
Gasoline	-	NS	NS	< 300	< 300	< 300	-	-	-	-	< 300	< 300	< 300	-	< 300	-	< 300	< 300	< 300	-	< 300	< 300	-	< 300	
Motor Oil	-	NS	NS	< 300	< 300	< 300	-	-	-	-	514	1,440	< 300	-	< 200	-	< 300	< 300	< 300	-	478	< 300	-	< 300	
Total Extractable Petroleum Hydrocarbon	-	NS	NS	< 300	< 300	< 300	-	-	-	-	1,910	1,440	< 300	-	359	-	360	< 300	< 300	-	1,270	< 300	-	< 300	
<b>Volatile Organic Compounds (ug/L)</b>																									
Tetrachloroethene	127-18-4	5	1,700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Trichloroethene	79-01-6	5	76	< 1.00	< 1.00	< 1.00	2.37	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.43	< 1.00
cis-1,2-Dichloroethene	156-59-2	70	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	2.57	< 1.00	< 1.00	1.49	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Vinyl Chloride	75-01-4	2	10	< 1.00	< 1.00	< 1.00	1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,1,1-Trichloroethane	74-55-6	200	70,000	< 1.00	< 1.00	3.61	2.16	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,1,2-Trichloroethane	79-00-5	5	61	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,1-Dichloroethane	75-34-3	NS	700	< 1.00	< 1.00	5.22	4.85	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,1-Dichloroethene	75-35-4	7	180	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	
1,2,4-Trimethylbenzene	95-63-6	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,2-Dichloroethane	107-06-2	5	38	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,3,5-Trimethylbenzene	108-67-8	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
2-Butanone	78-93-3	NS	21,000	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	
Acetone	67-64-1	NS	32,000	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	
Benzene	71-43-2	5	64	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Carbon Disulfide	75-15-0	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Chloroethane	75-00-3	NS	14,000	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	
Chloroform	67-66-3	80	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Chloromethane	74-87-3	NS	NS	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	
Cymene	99-87-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Ethylbenzene	100-41-4	700	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Isopropylbenzene	98-82-8	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Naphthalene	91-20-3	NS	700	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	
n-Butylbenzene	104-51-8	NS	1,800	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
n-Propylbenzene	103-65-1	NS	17,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
sec-Butylbenzene	135-98-8	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
tert-Butylbenzene	98-06-5	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Toluene	108-88-3	1,000	5,000	< 1.00	< 1.00	< 1.00	1.69	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.05	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
trans-1,2-Dichloroethene	156-60-5	100	700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Xylenes, Total	1330-20-7	10,000	10,000	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	
1,4-Dioxane	123-91-1	NS	1,000	NA																					
<b>Field Parameters</b>																									
pH	-	NS	NS	7.39	7.15	7.33	7.15	7.51	7.31	6.89	7.16	7.09	10.32	9.38	7.52	6.97	9.2	7.85	7.93	7.72	7.43	8.01			
Specific conductance (mS/cm)	-	NS	NS	0.722	0.858	0.795	0.767	0.703	1.159	1.154	0.98	0.983	0.274	0.304	0.571	0.896	0.964	0.749	0.733	0.648	1.092	0.35			
Temperature (Degrees Celsius)	-	NS	NS	7.14	6.82	7.98	12.75	9.46	19.15	16.1	6.62	10.38	15.33	11.58	7.15	9.32	10.58	7.91	11.92	13.41	10.41				
ORP (millivolts)	-	NS	NS	NR	NR	NR	NR	NR	142.9	60.9	-173.2	NR	100.5	-65.3	81.2	NR	86.3	NR	77.5	NR	47.9	-86.4	67.6		
DO (mg/L)	-	NS	NS	9.86	7.34	3.69	1.54	5.87	0.27	0.16	2.13														

Notes

All Results are in micrograms per liter ( $\mu\text{g/l}$ ).

All Results are in micrograms per liter  
mS/cm = milliSiemens per centimeter

mg/l = milligrams per liter

MCL = Environmental Protection Agency's Maximum Contaminant Level

MCL = Environmental Protection  
Bald = Compound exceeds MCL

**Bold = Compound exceeds MCL**

Total Extractable Petroleum Hydrocarbons are a sum of the three petroleum ranges: diesel, gasoline, and motor oil.

**Table 1: Summary of Detected Constituents in Groundwater**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Analyte	CAS-RN	MCL	Iowa DNR	MW-15						MW-16						MW-17						MW-18					
				Apr 2011	May 2012	Dec 2012	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Apr 2011	May 2012	Dec 2012	Apr 2011	May 2012	Dec 2012	Apr 2011	May 2012	Dec 2012	Apr 2011	May 2012	Dec 2012	Apr 2011	May 2012	Dec 2012		
<b>Extractable Petroleum Hydrocarbons (ug/L)</b>																											
Diesel (C12-C22)	-	NS	NS	< 375	< 300	-	-	-	-	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-		
Gasoline	-	NS	NS	< 375	< 300	-	-	-	-	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-		
Motor Oil	-	NS	NS	< 375	< 300	-	-	-	-	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-		
Total Extractable Petroleum Hydrocarbon	-	NS	NS	< 375	< 300	-	-	-	-	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-	< 300	< 300	-		
<b>Volatile Organic Compounds (ug/L)</b>																											
Tetrachloroethene	127-18-4	5	1,700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	2.49	3.15	1.73	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Trichloroethene	79-01-6	5	76	122	115	224	90.9	49.6	59	77.8	97.6	223	281	11.2	13	37	76.3	142	139								
cis-1,2-Dichloroethene	156-59-2	70	350	4.52	16.5	28.2	13.7	4.89	11	12.3	19.2	17.3	19.8	39.8	2.30	2.87	11.4	39.9	33.6	62.8							
Vinyl Chloride	75-01-4	2	10	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,1,1-Trichloroethane	71-55-6	200	70,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,1,2-Trichloroethane	79-00-5	5	61	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,1-Dichloroethane	75-34-3	NS	700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,2,4-Trimethylbenzene	95-63-6	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,2-Dichloroethane	107-06-2	5	38	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,3,5-Trimethylbenzene	108-67-8	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
2-Butanone	78-93-3	NS	21,000	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0		
Acetone	67-64-1	NS	32,000	59.8	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0		
Benzene	71-43-2	5	64	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
Carbon Disulfide	75-15-0	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Chloroethane	75-00-3	NS	14,000	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00		
Chloroform	67-66-3	80	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Chloromethane	74-87-3	NS	NS	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00		
Cymene	99-87-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Ethylbenzene	100-41-4	700	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Isopropylbenzene	99-82-8	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Naphthalene	91-20-3	NS	700	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00		
n-Butylbenzene	104-51-8	NS	1,800	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
n-Propylbenzene	103-65-1	NS	17,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
sec-Butylbenzene	135-98-8	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
tert-Butylbenzene	98-06-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Toluene	108-88-3	1,000	5,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
trans-1,2-Dichloroethene	156-60-5	100	700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Xylenes, Total	1330-20-7	10,000	50,000	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00		
1,4-Dioxane	123-81-1	NS	1,000	NA	NA	< 2.00	NA																				
Field Parameters																											
pH	-	NS	NS	7.28	7.08	7.18	6.67	7.28	7.21	-	7.06</td																



**Table 1: Summary of Detected Constituents in Groundwater  
Former Electrolux Manufacturing Facility  
Jefferson, Iowa**

Notes

Method QA-2 and SW8260B results are in micrograms per liter ( $\mu\text{g/l}$ ).

NS = No standard

mS/cm = millisiemens per centimeter

NA = Not a

$\mu\text{S/cm} = \mu\text{mhos/cm}$

NA = Not analyzed

mg/L = milligrams per liter

NR = Not recorded





**Table 1: Summary of Detected Constituents in Groundwater  
Former Electrolux Manufacturing Facility  
Jefferson, Iowa**

Analyte	CAS-RN	MCL	Iowa DNR	MW-37		MW-38		MW-39		MW-40		MW-41		MW-42		MW-43D					MW-43I		MW-43S		MW-44		MW-45	
				Dec 2012	Mar 2013	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Dec 2012	NA	NA	NA	NA	NA	NA												
<b>Extractable Petroleum Hydrocarbons (ug/L)</b>																												
Diesel (C12-C22)	-	NS	NS	< 300	< 300	395	383	< 300	< 300	< 300	< 300	< 288	-	-	-	-	-	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 300	
Gasoline	-	NS	NS	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 288	-	-	-	-	-	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 300	430	
Motor Oil	-	NS	NS	< 300	< 300	890	726	< 300	410	< 300	< 288	-	-	-	-	-	< 300	< 300	477	< 300	< 300	< 300	< 300	< 300	< 300	< 300	< 300	
Total Extractable Petroleum Hydrocarbon	-	NS	NS	< 300	< 300	1,280	1,110	< 300	410	< 300	< 288	-	-	-	-	-	< 300	< 300	477	< 300	< 300	< 300	< 300	< 300	< 300	< 300	430	
<b>Volatile Organic Compounds (ug/L)</b>																												
Tetrachloroethene	127-18-4	5	1,700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.51	< 1.00	70.3	92.0		
Trichloroethene	79-01-6	5	76	1.42	< 1.00	< 1.00	< 1.00	1.03	< 1.00	9.13	4.70	4.65	2.28	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	32,500	29,000		
cis-1,2-Dichloroethene	156-59-2	70	350	4.14	< 1.00	1.92	8.20	5.09	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1,040	1,070			
Vinyl Chloride	75-01-4	2	10	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	6.15	6.27			
1,1,1-Trichloroethane	71-55-6	200	70,000	1.64	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	2.89	3.05			
1,1,2-Trichloroethane	79-00-5	5	61	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.60	1.75			
1,1-Dichloroethane	75-34-3	NS	700	28.1	2.16	314	< 1.00	67.9	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	2.61	2.47		
1,1-Dichloroethene	75-35-4	7	180	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	27.7	26.7			
1,2,4-Trimethylbenzene	95-63-6	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
1,2-Dichloroethane	107-06-2	5	38	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.41	1.29			
1,3,5-Trimethylbenzene	108-67-8	NS	350	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
2-Butanone	78-93-3	NS	21,000	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0		
Acetone	67-64-1	NS	32,000	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	11.4	< 10.0			
Benzene	71-43-2	5	64	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.88	0.85		
Carbon Disulfide	75-15-0	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Chloroethane	75-00-3	NS	14,000	< 4.00	< 4.00	7.08	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00		
Chloroform	67-66-3	80	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	7.99	3.56	3.41	1.81	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	4.38	4.32			
Chloromethane	74-87-3	NS	NS	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00		
Cymene	99-87-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Ethylbenzene	100-41-4	700	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.22	1.43				
Isopropylbenzene	98-82-8	NS	3,500	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Naphthalene	91-20-3	NS	700	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00		
n-Butylbenzene	104-51-8	NS	1,800	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
n-Propylbenzene	103-65-1	NS	17,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
sec-Butylbenzene	135-98-8	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
tert-Butylbenzene	98-06-6	NS	NS	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00		
Toluene	108-88-3	1,000	5,000	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	2.23	2.36			
trans-1,2-Dichloroethene	156-60-5	100	700	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	15.4	18.7			
Xylenes, Total	1330-20-7	10,000	50,000	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	6.90	8.65			
1,4-Dioxane	123-91-1	NS	1,000	NA	NA	NA	NA	NA	NA	NA																		
<b>Field Parameters</b>																												
pH	-	NS	NS	7.15	7.29	7.15	7.27	7.31	7.34	7.09	-	7.06	7.34	6.92	7.03	7.39	7.26	7.36										

Nex

Method OA-2 and SW8260B results are in micrograms per liter ( $\mu\text{g/l}$ ).

NS = No standard

Method OA-2 and SW8260B results

NA = Not applicable

$\mu\text{S/cm} = \text{millisiemens per centimeter}$

NA = Not analyzed  
NP = Not provided

**mg/L = milligrams per liter**

NR = Not recorded



**Table 1: Summary of Detected Constituents in Groundwater  
Former Electrolux Manufacturing Facility  
Jefferson, Iowa**

Notes:  
Method OA-2 and SW8260B results are in micrograms per liter ( $\mu\text{g/L}$ ).

NS = No standard

**mS/cm = millisiemens per centimeter**

NA = Not analyzed

mg/L = milligrams per liter

NR = Not recorded

MCL = Environmental

N = normal sample

**Bold = Compound exceeds MCL**

**Table 1: Summary of Detected Constituents in Groundwater**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Analyte	CAS-RN	MCL	Iowa DNR	MW-60		MW-61			MW-62			MW-63		MW-64							
				Mar 2013		Mar 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014
				N	FD	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	N
<b>Extractable Petroleum Hydrocarbons (ug/L)</b>																					
Diesel (C12-C22)	-	NS	NS	< 313	< 288	< 278	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gasoline	-	NS	NS	< 313	360	< 278	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Motor Oil	-	NS	NS	342	< 288	337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Extractable Petroleum Hydrocarbon	-	NS	NS	342	360	337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Volatile Organic Compounds (ug/L)</b>																					
Tetrachloroethene	127-18-4	5	1,700	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Trichloroethene	79-01-6	5	76	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	196	175	32.9	< 1.00	< 1.00	
cis-1,2-Dichloroethene	156-59-2	70	350	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.24	1.06	< 1.00	< 1.00	< 1.00	< 1.00	
Vinyl Chloride	75-01-4	2	10	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,1,1-Trichloroethane	71-55-6	200	70,000	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,1,2-Trichloroethane	79-00-5	5	61	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,1-Dichloroethane	75-34-3	NS	700	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,1-Dichloroethene	75-35-4	7	180	< 2.00	-	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	
1,2,4-Trimethylbenzene	95-63-6	NS	350	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,2-Dichloroethane	107-06-2	5	38	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
1,3,5-Trimethylbenzene	108-67-8	NS	350	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
2-Butanone	78-93-3	NS	21,000	< 10.0	-	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	
Acetone	67-64-1	NS	32,000	< 10.0	-	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	
Benzene	71-43-2	5	64	< 0.50	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Carbon Disulfide	75-15-0	NS	3,500	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	1.05	< 1.00	1.08	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Chloroethane	75-00-3	NS	14,000	< 4.00	-	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	< 4.00	
Chloroform	67-66-3	80	NS	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Chloromethane	74-87-3	NS	NS	< 3.00	-	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	
Cymene	99-87-6	NS	NS	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Ethylbenzene	100-41-4	700	3,500	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Isopropylbenzene	98-82-8	NS	3,500	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Naphthalene	91-20-3	NS	700	< 5.00	-	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	
n-Butylbenzene	104-51-8	NS	1,800	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
n-Propylbenzene	103-65-1	NS	17,000	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
sec-Butylbenzene	135-98-8	NS	NS	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
tert-Butylbenzene	98-06-6	NS	NS	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Toluene	108-88-3	1,000	5,000	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
trans-1,2-Dichloroethene	156-60-5	100	700	< 1.00	-	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	
Xylenes, Total	1330-20-7	10,000	50,000	< 3.00	-	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	< 3.00	
1,4-Dioxane	123-91-1	NS	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2.00	< 2.00	NA	NA	< 2.00	< 2.00	

Notes:

Method OA-2 and SW8260B results are in micrograms per liter (ug/L).

mS/cm = millisiemens per centimeter

mg/L = milligrams per liter

MCL = Environmental Protection Agency's Maximum Contaminant Level

Bold = Compound exceeds MCL

FD = field duplicate sample

NS = No standard

NA = Not analyzed

NR = Not recorded

N = normal sample

**Table 1: Summary of Detected Constituents in Groundwater  
Former Electrolux Manufacturing Facility  
Jefferson, Iowa**

Analyte	CAS-RN	MCL	Iowa DNR	MW-65												MW-66				MW-67					
				Oct 2013			Apr 2014			Jul 2014			Oct 2014			Dec 2014		Mar 2015		Jul 2016		Nov 2015		Jul 2016	
				N	N	N	N	N	FD	N	N	FD	N	N	FD	N									
<b>Extractable Petroleum Hydrocarbons (ug/L)</b>																									
Diesel (C12-C22)	-	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gasoline	-	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Motor Oil	-	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Extractable Petroleum Hydrocarbon	-	NS	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Volatile Organic Compounds (ug/L)</b>																									
Tetrachloroethene	127-18-4	5	1,700	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
Trichloroethene	79-01-6	5	76	<1.00	2.42	44.7	826	799	1,730	1,530	2,370	2,360	2,420	3.94	6.38	5.79	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
cis-1,2-Dichloroethene	156-59-2	70	350	<1.00	1.27	2.17	17.1	14.5	22.9	20.8	29.7	28.1	61.3	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Vinyl Chloride	75-01-4	2	10	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	1.41	1.32	1.89	1.9	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
1,1,1-Trichloroethane	74-55-6	200	70,000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
1,1,2-Trichloroethane	79-00-5	5	61	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
1,1-Dichloroethane	75-34-3	NS	700	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
1,1-Dichloroethene	75-35-4	7	180	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00		
1,2,4-Trimethylbenzene	95-63-6	NS	350	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
1,2-Dichloroethane	107-06-2	5	38	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
1,3,5-Trimethylbenzene	108-67-8	NS	350	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
2-Butanone	78-93-3	NS	21,000	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0		
Acetone	67-64-1	NS	32,000	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0		
Benzene	71-43-2	5	64	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Carbon Disulfide	75-15-0	NS	3,500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
Chloroethane	75-00-3	NS	14,000	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00		
Chloroform	67-66-3	80	NS	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	2.16	2.05		
Chloromethane	74-87-3	NS	NS	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00		
Cymene	99-87-6	NS	NS	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
Ethylbenzene	100-41-4	700	3,500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
Isopropylbenzene	98-82-8	NS	3,500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
Naphthalene	91-20-3	NS	700	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00		
n-Butylbenzene	104-51-8	NS	1,800	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
n-Propylbenzene	103-65-1	NS	17,000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
sec-Butylbenzene	135-98-8	NS	NS	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
tert-Butylbenzene	99-06-6	NS	NS	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
Toluene	108-88-3	1,000	5,000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
trans-1,2-Dichloroethene	156-60-5	100	700	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	1.99	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		
Xylenes, Total	1330-20-7	10,000	50,000	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00		
1,4-Dioxane	123-91-1	NS	1,000	<2.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
<b>Field Parameters</b>																									
pH	-	NS	NS	7.15	6.98	6.92	7.02	-	7.20	-	6.69	-	6.87	-	6.58	-	6.79	-	7.11	-	6.98	-	-	-	
Specific conductance (mS/cm)	-	NS	NS	1,286	0.777	0.912	0.94	-	0.951	-	0.998	-	0.955	-	0.955	-	0.755	-	0.845	-	0.891	-	0.96	-	
Temperature (Degrees Celsius)	-	NS	NS	16.27	15.9	17.73	16.3	-	5.63	-	3.58	-	19.71	-	12.13	-	13.91	-	12.56	-	13.81	-	-	-	
ORP (millivolts)	-	NS	NS	-50.1	-212.4	-65.5	-67.2	-	-4	-	-67	-	-32.8	-	-92.3	-	62.7	-	-287	-	4.4	-	-	-	
DO (mg/L)	-	NS	NS	2.47	0.23	1.57	NA	-	0.0	-	0.0	-	0.63	-	3.46	-	0.58	-	4.71	-	0.47	-	0.47	-	

Prepared by: TG B  
Checked by: JMR  
Reviewed by: APTM

**Table 2: Summary of EPH/VPH Constituents in Groundwater**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Analyte	MCP GW-1	MCL	MW-21	MW-35	MW-36S	MW-51	MW-52
			12/12/2012	12/12/2012	12/12/2012	12/12/2012	12/12/2012
		N	N	N	N	N	FD
<b>EPH</b>							
2-Methylnaphthalene	10	NS	<10	<10	<11	<10	<10
Acenaphthene	20	NS	<10	<10	<11	<10	<10
Acenaphthylene	30	NS	<10	<10	11	<10	<10
Anthracene	60	NS	<10	<10	<11	<10	<10
Benzo[a]anthracene	1	NS	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;11</b>	<b>&lt;10</b>	<b>&lt;10</b>
Benzo[a]pyrene	0.2	0.2	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;11</b>	<b>&lt;10</b>	<b>&lt;10</b>
Benzo[b]fluoranthene	1	NS	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;11</b>	<b>&lt;10</b>	<b>&lt;10</b>
Benzo[g,h,i]perylene	50	NS	<10	<10	<11	<10	<10
Benzo[k]fluoranthene	1	NS	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;11</b>	<b>&lt;10</b>	<b>&lt;10</b>
C11-C22 Aromatics (Adjusted)	200	NS	<b>1200</b>	110	<100	<100	<100
C11-C22 Aromatics (Unadjusted)	200	NS	<b>1200</b>	140	<110	<100	<100
C19-C36 Aliphatics (Unadjusted)	14,000	NS	5000	1500	<110	240	180
C9-C18 Aliphatics (Unadjusted)	700	NS	<b>1300</b>	330	<110	<100	<100
Chrysene	2	NS	<10	<10	<11	<10	<10
Dibenzo[a,h]anthracene	0.5	NS	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;11</b>	<b>&lt;10</b>	<b>&lt;10</b>
Fluoranthene	90	NS	<10	<10	<11	<10	<10
Fluorene	30	NS	<10	<10	<11	<10	<10
Indeno[1,2,3-cd]pyrene	0.5	NS	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;11</b>	<b>&lt;10</b>	<b>&lt;10</b>
Naphthalene	140	NS	26	29	<11	17	<10
Phenanthrene	40	NS	<10	<10	<11	<10	<10
Pyrene	80	NS	11	<10	<11	<10	<10
<b>VPH</b>							
Benzene	5	5	<b>&lt;50</b>	<b>&lt;50</b>	<b>&lt;10</b>	<b>&lt;5</b>	<b>&lt;10</b>
C5-C8 Aliphatics (Adjusted)	300	NS	<10	<10	<10	<10	<10
C5-C8 Aliphatics (Unadjusted)	300	NS	<b>&lt;500</b>	<b>&lt;500</b>	<100	<50	<100
C9-C10 Aromatics (Unadjusted)	200	NS	<b>760</b>	<b>790</b>	140	<50	<100
C9-C12 Aliphatics (Adjusted)	700	NS	<10	<10	<10	<10	<10
C9-C12 Aliphatics (Unadjusted)	700	NS	<500	<500	<100	<50	<100
Ethylbenzene	700	700	<50	<50	<10	<5	<10
m,p-Xylenes	10,000	10,000	<100	<100	<20	<10	<20
Methyl tert-Butyl Ether	70	NS	<50	<50	<10	<5	<10
Naphthalene	140	NS	<50	<50	<10	<5	<10
o-Xylene	10,000	10,000	60	69	14	<5	<10
Toluene	1,000	1,000	<50	<50	19	<5	<10

Notes:

EPH = Extractable Petroleum Hydrocarbons

VPH = Volatile Petroleum Hydrocarbons

All values in micrograms per liter (ug/L)

N = normal sample

FD = field duplicate sample

NS = No standard

MCL = Environmental Protection Agency's Maximum Contaminant Level

MCP GW-1 = Massachusetts Contingency Plan's Method 1 Groundwater Standard

**Bold** = Compound exceeds MCL and/or MCP GW-1Prepared by: ATKChecked by: JSPReviewed by: APTM

**Table 3: Monitored Natural Attenuation Analytical Data**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Analyte	MW-08				MW-15				MW-19				MW-24				MW-25D				MW-25S				
	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014		
<b>Metals (mg/L)</b>																									
Iron	<0.1	<0.1	<0.1	<0.1	0.106	0.196	0.192	0.144	0.974	0.412	<0.1	0.277	NA	<0.1	0.279	0.346	0.167	0.116	<0.1	<0.1	NA	23.5	2.28	2.71	
Manganese	<0.01	0.0155	0.0541	0.0799	0.0123	0.0221	0.016	0.0248	0.0751	0.051	0.0134	0.0312	NA	0.0982	0.441	0.28	0.256	0.111	0.208	0.164	0.189	NA	1.22	0.837	0.206
Calcium	NA																								
Magnesium	NA																								
Potassium	NA																								
Sodium	NA																								
<b>Natural Attenuation Parameters (mg/L)</b>																									
Alkalinity, Total	NA																								
Nitrite as N	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Nitrate as N	<0.1	<0.1	<0.1	<0.1	3.71	4.42	4.2	1.64	<0.1	<0.1	0.418	0.12	0.102	0.875	1.59	0.572	0.115	0.15	0.21	<0.1	<0.1	<0.1	<0.1	0.123	
Sulfate	47.4	59.1	33.4	21.5	22.7	33.4	34	21.8	83.9	58.8	70.5	53.9	104	101	94	8.67	34.8	26.4	25.4	29.2	<5	<5	<5	<5	
Chloride	88.2	116	62.8	NA	24.7	23.9	23.8	19.8	NA	15.4	23.7	16.8	NA	30.2	26.9	5.3	NA	<5	5.15	5.49	5.79	NA	146	142	69.5
Total Organic Carbon	3.09	3.54	2.84	5.15	6.36	6.24	6.16	6.96	3.35	3.92	3.43	NA	1.55	1.54	4.05	2	1.52	1.61	2.42	1.77	NA	420	518	50.7	
<b>Dissolved Gases (ug/L)</b>																									
Methane	0.88	3.2	3.3	3.1	2.4	2.1	2	2.1	1.3	5.2	0.41	0.5	9.6	1.8	96	0.3	1,100	0.7	4.4	12	10	1,100	2,900	660	2,400
Ethane	0.044	<0.025	<0.027	0.027	<0.025	<0.025	<0.025	0.025	44	1.2	4	2.6	0.031	0.028	0.053	<0.025	0.077	<0.025	<0.025	<0.025	0.42	0.56	0.23	0.42	
Ethene	0.18	0.76	<0.025	0.12	0.057	0.14	0.055	0.064	41	0.086	4.4	2.4	0.073	0.043	0.059	0.12	0.16	0.033	0.044	0.16	470	1,200	310	980	
<b>Field Parameters</b>																									
pH	7.51	7.31	6.89	6.67	7.28	7.21	-	7.06	7.48	7.42	7.14	7.01	6.96	6.99	6.94	6.92	6.97	7.25	7.14	7.05	-	6.93	7	6.78	6.85
Specific conductance (mS/cm)	0.703	1.159	1.154	0.757	0.712	0.912	-	0.822	0.734	0.578	0.644	0.672	0.973	0.866	0.95	0.916	0.892	0.832	0.864	0.84	-	1,800	1,997	1,961	2,076
Temperature (Degrees Celsius)	9.46	19.15	16.1	18.97	8.47	16.67	-	16.6	18.72	8.29	17.29	19	20.91	14.18	18.34	13	19.69	14.82	20.07	14.3	-	21.79	10.86	17.96	19.9
ORP (millivolts)	142.9	60.9	-173.2	-63.4	201.4	44.6	-	-141.1	-44	19	-77.5	-122	-20.8	162.1	40.7	-112.8	-32.4	51.7	52.3	-108.1	-	-110.1	-124.6	-87.3	-143.7
DO (mg/L)	5.87	0.27	0.16	0.43	4.63	5.84	-	0.48	1.66	2.7	1.48	0.51	0.52	2.81	1.9	2.33	0.18	1.78	0.57	0.21	-	0.29	0.41	0.57	0.13
Analyte	MW-26D				MW-26S				MW-28				MW-29				MW-31				MW-43D				
	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	
<b>Metals (mg/L)</b>																									
Iron	NA	<0.1	<0.1	<0.1	NA	0.127	0.107	<0.1	0.442	1.22	<0.5	0.918	2.23	0.193	NA	0.13	0.143	<0.1	0.213	<0.1	0.255	<0.1	<0.1	<0.1	<0.1
Manganese	NA	0.172	0.0885	0.195	NA	0.0247	0.0473	0.0285	0.989	1.04	0.982	0.796	0.313	0.182	NA	0.227	NA	0.0868	0.0975	0.248	1.19	0.454	0.21	0.862	
Calcium	NA																								
Magnesium	NA																								
Potassium	NA																								
Sodium	NA																								
<b>Natural Attenuation Parameters (mg/L)</b>																									
Alkalinity, Total	NA																								
Nitrite as N	<0.1	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Nitrate as N	<0.1	1.78	0.425	0.168	NA	1.16	1.28	1.66	<0.1	<0.1	<0.1	<0.1	<0.1	0.177	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.403	0.288	<0.1	
Sulfate	41.2	36.4	43.2	38.6	NA	50.2	48	46.5	47.9	43.1	40.6	32.5	128	139	188	140	NA	177	178	136	26.3	20.1	21.1	15.2	
Chloride	NA	9.61	11	11.6	NA	60.6	63.3	61.1	NA	217	213	165	NA	48.5	72	54	NA	44	43.8	34.5	NA	11	12.3	10.9	
Total Organic Carbon	NA	1.48	1.75	1.22	NA	2.42	2.19	2.34	28.8	30.1	36.6	7.75	4.9	NA	3.34	NA	2.13	2.01	2.59	2.63	2.25	1.9	1.89		
<b>Dissolved Gases (ug/L)</b>																									
Methane	9.9	0.57	42	10	1.6	5.6	3.4	2.1	1,800	2,100	2,000	1,200	0.51	0.71	0.5	0.38	110	24	44	5.7	2.9	2.5	0.59	3.8	
Ethane	0.21	0.11	0.092	0.12	0.96	0.33	1	0.58	1.0	0.75	1	0.78	0.41	0.64	0.49	0.2	3.6	1.3	1.6	0.55	0.32	0.24	0.032	0.47	
Ethene	0.14	0.062	0.054	0.22	0.94	0.06	0.94	0.3	1,700	1,600	1,400	1,500	1.8	0.56	2.1	1.6	0.86	0.034	0.098	0.095	4.3	0.3	0.033	0.14	
<b>Field Parameters</b>																									
pH	7.08	7.07	6.95	6.92	7.28	7.24	7.15	7.05	6.91	6.85	6.72	7.41	7.22	6.95	6.78	7.07	7.17	7.28	7.14	7.06	7.34	6.92	7.03		
Specific conductance (mS/cm)	0.835	0.813	0.798	0.88	0.889	0.873	0.966	0.92	1.537	1.477	1.457	1.46	0.612	0.882	1.134	1.07	1.121								

**Table 7: Monitored Natural Attenuation Analytical Data**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Analyte	MW-46				MW-47D				MW-53				MW-57				MW-61				MW-62				MW-63										
	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Dec 2014	Mar 2015	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014	Oct 2013	Apr 2014	Jul 2014	Oct 2014						
Metals (mg/L)	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
Iron	0.391	0.21	0.136	0.234	0.474	0.613	1.7	0.82	1.32	1.43	2.04	NA	0.176	<0.1	0.217	0.202	0.175	0.368	<0.1	<0.1	0.113	18.8	1.5	1.31	1.05	<0.1	<0.1	0.181	0.102	0.105					
Manganese	0.653	0.643	0.79	0.772	0.705	0.729	0.747	0.697	0.692	0.723	0.718	NA	0.206	<0.05	<0.01	0.701	0.648	0.686	0.615	<0.01	0.04	0.116	1.84	0.476	0.495	0.483	1.13	1.14	1.14	1.58	1.42	1.43			
Calcium	NA	NA																																	
Magnesium	NA	NA																																	
Potassium	NA	NA																																	
Sodium	NA	NA																																	
Natural Attenuation Parameters (mg/L)																																			
Alkalinity, Total	NA	NA																																	
Nitrite as N	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					
Nitrate as N	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					
Sulfate	22.8	27.7	25.4	22	16.3	25.4	25	19.8	13.1	12.5	9.86	39.4	32	36	28	54.4	55.1	55.6	47	73.3	65.2	40.7	42.5	32.7	25.4	17.4	160	161	157	158	115				
Chloride	<5	<5	<5	NA	144	143	144	147	203	155	NA	34.3	33.3	22.2	15.1	15	15.6	14.6	<5	<5	<5	NA	3.52	<5	<5	NA	NA	<5	<5	7.92					
Total Organic Carbon	1.82	2.08	1.42	1.69	2.12	2.42	2.52	2.67	2.03	2.05	NA	6.84	4.5	4.91	1.89	2.12	1.76	2.07	6.11	2.98	2.51	5.58	2.71	2.47	14.3	2.49	2.45	1.25	1.12	16.9					
Dissolved Gases (ug/L)																																			
Methane	20	12	7.1	7.1	98	160	160	140	180	NA	NA	0.63	9.4	0.61	0.27	2	2	1.6	2	0.41	1.5	6.5	91	580	490	510	1.9	3.9	2.2	2.8	2.2				
Ethane	2.2	1.1	0.73	1.4	3.4	2.7	2.9	2.3	2.8	NA	NA	0.14	0.32	<0.025	<0.025	0.098	0.033	0.025	0.044	0.48	0.57	0.76	0.33	0.34	0.15	0.1	0.26	0.27	0.11	0.16	0.12				
Ethene	2.5	0.48	0.45	0.88	140	270	280	220	280	NA	NA	0.21	0.61	0.026	0.11	0.12	0.091	0.17	0.08	0.26	0.64	0.44	0.99	1	0.89	0.28	0.24	0.12	0.048	0.12					
Field Parameters																																			
pH	6.81	7.11	6.93	6.93	7.06	6.98	-	7.02	6.89	7.25	6.74	6.2	7.15	7.15	7.04	7.07	-	6.97	6.93	8.63	7.79	7.24	7.37	7.17	6.69	6.88	7.19	-	6.97	6.8	6.8				
Specific conductance (mS/cm)	0.719	0.692	0.762	0.77	1.462	1.238	-	1.119	1.33	1.34	1.31	0.902	0.788	0.87	0.762	0.792	-	0.821	0.792	0.549	0.701	0.821	1.082	0.657	0.757	0.692	1.084	-	1.087	1.073	1.074				
Temperature (Degrees Celsius)	17.2	12.6	14.98	15.3	15.58	15.2	-	19.04	16.8	12.47	12.38	17.28	8	15.78	16.9	12.06	-	14.11	15.2	12.33	14.74	14.2	12.7	15.64	15.3	13.5	15.86	-	11.89	12.66	12.6				
ORP (millivolts)	-84.5	-3.1	-24.4	-79.2	-25.7	-26.3	-	50.4	-122.9	-26	-41	73.8	-137.4	20.65	-78	11.3	-	12.8	-74	34.9	25.8	-97.5	44.4	62.9	-53.9	-115.3	156.3	-	15.6	45.4	-64.7				
DO (mg/L)	0.2	0.02	0.33	0.14	0.24	0.4	-	0.32	0.17	0.0	0.0	1.96	0.16	3.96	3.92	3.96	4.46	4.41	3.81	3.83	-	0.42	0.16	5.37	0.47	0.2	3.39	1.33	0.64	0.3	7.46	-	0.31	0.3	0.13

Notes:

ug/L = micrograms per liter

mg/L = milligrams per liter

mS/cm = millisiemens per centimeter

NA = Not analyzed

N = normal sample

FD = field duplicate sample

Prepared by: ATK  
 Checked by: JMR  
 Reviewed by: APTM

**Table 4: Summary of Evidence of Natural Degradation of CVOCs**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Well Information				Chlorinated VOCs (ug/L)					Dissolved Gases (ug/L)			Field Parameters	
Well	Date	Well depth (ft-bgs)	Unit Screened	Trichloroethene	cis-1,2-Dichloroethene	1,2-Dichloroethane	1,1,1-Trichloroethane	Vinyl Chloride	Methane	Ethene	Ethane	ORP (millivolts)	DO (mg/L)
MW-8	Apr-14	10	Oxidized Till	<1.00	<1.00	<1.00	<1.00	<1.00	0.88	0.18	0.044	142.9	5.87
	Jul-14			<1.00	<1.00	<1.00	<1.00	<1.00	3.2	0.76	<0.025	60.9	0.27
	Oct-14			<1.00	<1.00	<1.00	<1.00	<1.00	3.3	<0.025	<0.025	-173.2	0.16
MW-15	Apr-14	13	Oxidized Till	49.6	4.89	<1.00	<1.00	<1.00	2.4	0.057	<0.025	201.4	4.63
	Jul-14			59	11	<1.00	<1.00	<1.00	2.1	0.14	<0.025	44.6	5.84
	Oct-14			97.6	19.2	<1.00	<1.00	<1.00	2.1	0.064	<0.025	-141.1	0.48
MW-19	Apr-14	12	Oxidized Till	614,000	4,750	<2000	13,400	<2000	5.2	0.086	1.2	19	2.70
	Jul-14			124,000	372	<100	3,510	<100	0.41	4.4	4.0	-77.5	1.48
	Oct-14			26,300	637	<100	660	<100	0.5	2.4	2.6	-122	0.51
MW-24	Apr-14	18	Oxidized Till	<1.00	<1.00	<1.00	<1.00	<1.00	1.8	0.043	0.028	162.1	2.81
	Jul-14			2.43	<1.00	<1.00	<1.00	<1.00	96	0.059	0.053	40.3	1.90
	Oct-14			64.1	4.79	<1.00	<1.00	<1.00	0.3	0.12	<0.025	-112.8	2.33
MW-25D	Apr-14	29	Unoxidized Till	5.08	<1.00	<1.00	<1.00	<1.00	0.7	0.033	<0.025	51.7	1.78
	Jul-14			10.2	<1.00	<1.00	<1.00	<1.00	4.4	0.044	<0.025	52.3	0.57
	Oct-14			9.1	<1.00	<1.00	<1.00	<1.00	12	0.16	<0.025	-108.1	0.21
MW-25S	Apr-14	18	Oxidized Till	1,320	45,900	<10	<10	6,060	2,900	1,200	0.56	-124.6	0.41
	Jul-14			<100	33,400	<100	<100	3,030	660	310	0.23	-87.3	0.57
	Oct-14			<100	30,400	<100	<100	2,890	2,400	980	0.42	-143.7	0.13
MW-26D	Apr-14	25	Unoxidized Till	123	6.68	<1.00	<1.00	<1.00	0.57	0.062	0.11	39.1	2.47
	Jul-14			51.5	13.7	<1.00	<1.00	<1.00	42	0.054	0.092	51.4	1.46
	Oct-14			133	12	<1.00	<1.00	<1.00	10	0.22	0.12	-72.7	1.10
MW-26S	Apr-14	16	Oxidized Till	43,200	518	<1.00	<1.00	<1.00	5.6	0.06	0.33	49.5	3.27
	Jul-14			67,200	792	<100	<100	<100	3.4	0.94	1.0	147.6	2.12
	Oct-14			56,000	959	<100	<100	<100	2.1	0.3	0.58	-122.7	1.66
MW-28	Apr-14	18	Unoxidized Till	48,600	102,000	2.1	<1.00	10,500	2,100	1,600	0.75	30.3	0.38
	Jul-14			31,300	85,500	<100	<100	7,620	2,000	1,400	1.0	-59.2	0.28
	Oct-14			32,700	66,600	<100	<100	8,540	1,200	1,500	0.78	-100.6	0.35
MW-29	Apr-14	21	Unoxidized Till	70,500	745	11.5	16.6	9.95	0.71	0.56	0.64	74.2	4.65
	Jul-14			98,000	759	<100	<100	<100	0.5	2.1	0.49	-4.2	0.84
	Oct-14			63,000	989	<100	<100	<100	0.38	1.6	0.2	-103	2.17
MW-31	Apr-14	18	Unoxidized Till	5,580	12,600	<100	<100	<100	24	0.034	1.3	-24.8	2.30
	Jul-14			2,710	6,780	<100	<100	<100	44	0.098	1.6	123	2.31
	Oct-14			4,130	9,720	<100	<100	<100	5.7	0.095	0.55	-83	2.78

**Table 4: Summary of Evidence of Natural Degradation of CVOCs**  
**Former Electrolux Manufacturing Facility**  
**Jefferson, Iowa**

Well Information			Chlorinated VOCs (ug/L)					Dissolved Gases (ug/L)			Field Parameters		
Well	Date	Well depth (ft-bgs)	Unit Screened	Trichloroethene	cis-1,2-Dichloroethene	1,2-Dichloroethane	1,1,1-Trichloroethane	Vinyl Chloride	Methane	Ethene	Ethane	ORP (millivolts)	DO (mg/L)
MW-43D	Apr-14	41	Yellow-Brown Till	<1.00	<1.00	<1.00	<1.00	<1.00	2.5	0.3	0.24	56.2	2.35
	Jul-14			<1.00	<1.00	<1.00	<1.00	<1.00	0.59	0.033	0.032	191.5	0.72
	Oct-14			<1.00	<1.00	<1.00	<1.00	<1.00	3.8	0.14	0.47	-81.4	0.24
MW-46	Apr-14	41	Yellow-Brown Till	1,640	424	<1.00	<1.00	<1.00	12	0.48	1.1	-3.1	0.02
	Jul-14			21,000	359	<10.0	<10.0	<10.0	7.1	0.45	0.73	-24.4	0.33
	Oct-14			14,700	883	<100	<100	<100	7.1	0.88	1.4	-79.2	0.14
MW-47D	Apr-14	42	Yellow-Brown Till	43,200	19,500	<1.00	<1.00	388	160	270	2.7	-26.3	0.40
	Jul-14			25,300	20,900	<100	<100	492	140	220	2.3	50.4	0.32
	Oct-14			26,700	28,800	<1.00	<1.00	567	180	280	2.8	-122.9	0.17
	Dec-14			25,500	35,700	<100	<100	503	NA	NA	NA	-26	0.00
	Mar-15			28,800	37,000	<1.00	<1.00	491	NA	NA	NA	-41	0.00
MW-53	Apr-14	12	Oxidized Till	10.9	76.8	<1.00	15.4	<1.00	9.4	0.61	0.32	-137.4	0.18
	Jul-14			13.8	93.8	<1.00	19.2	<1.00	0.61	0.14	<0.025	206.5	2.39
	Oct-14			12.7	69.9	<1.00	10.4	<1.00	0.27	0.026	<0.025	-78	1.08
MW-57	Apr-14	37	Yellow-Brown Till	953	7.91	<1.00	<1.00	<1.00	2.0	0.11	0.098	11.3	0.38
	Jul-14			1,100	<10.0	<10.0	<10.0	<10.0	1.6	0.091	0.025	12.8	0.42
	Oct-14			853	8.78	<1.00	<1.00	<1.00	2.0	0.17	0.044	-74	0.16
MW-61	Apr-14	39	Yellow-Brown Till	<1.00	<1.00	<1.00	<1.00	<1.00	0.41	0.08	0.48	34.9	5.37
	Jul-14			<1.00	<1.00	<1.00	<1.00	<1.00	1.5	0.26	0.57	25.8	0.47
	Oct-14			<1.00	<1.00	<1.00	<1.00	<1.00	6.5	0.64	0.76	-97.5	0.20
MW-62	Apr-14	72	Dark Gray Till	<1.00	<1.00	<1.00	<1.00	<1.00	580	0.99	0.34	62.9	1.33
	Jul-14			<1.00	<1.00	<1.00	<1.00	<1.00	490	1.0	0.15	-53.9	0.64
	Oct-14			1.1	<1.00	<1.00	<1.00	<1.00	510	0.89	0.1	-115.3	0.30
MW-63	Apr-14	72	Dark Gray Till	<1.00	<1.00	<1.00	<1.00	<1.00	2.2	0.12	0.11	15.6	0.31
	Jul-14			<1.00	<1.00	<1.00	<1.00	<1.00	2.8	0.048	0.16	45.4	0.30
	Oct-14			<1.00	<1.00	<1.00	<1.00	<1.00	2.2	0.12	0.12	-64.7	0.13
MW-64	Apr-14	38	Yellow-Brown Till	32.9	<1.00	<1.00	<1.00	<1.00	2.2	0.044	0.1	63.2	1.02
	Jul-14			<1.00	<1.00	<1.00	<1.00	<1.00	2.1	0.055	0.093	-26.8	0.31
	Oct-14			<1.00	<1.00	<1.00	<1.00	<1.00	1.4	0.12	0.044	-86.9	0.31
MW-65	Apr-14	73	Dark Gray Till	2.42	1.27	<1.00	<1.00	<1.00	110	3.0	0.38	-212.4	0.23
	Jul-14			44.7	2.17	<1.00	<1.00	<1.00	84	0.25	0.18	-65.5	1.57
	Oct-14			826	17.1	<1.00	<1.00	<1.00	36	0.29	0.1	-67.2	NA
	Dec-14			1,730	22.9	<1.00	<1.00	<1.00	NA	NA	NA	-4	0.00
	Mar-15			2,370	29.7	<1.00	<1.00	<1.00	1.89	NA	NA	-67	0.00
	Jul-16			2,420	61.3	<1.00	<1.00	<1.00	NA	NA	NA	-32.8	0.63
MW-66	Nov-15	55	Yellow-Brown Till	3.94	<1.00	<1.00	<1.00	<1.00	NA	NA	NA	-92.3	3.46
	Jul-16			6.38	<1.00	<1.00	<1.00	<1.00	NA	NA	NA	62.7	0.58
MW-67	Nov-15	97	Pleistocene	<1.00	<1.00	<1.00	<1.00	<1.00	NA	NA	NA	-286.5	4.71
	Jul-16			<1.00	<1.00	<1.00	<1.00	<1.00	NA	NA	NA	4.4	0.47

Notes:

ug/L = micrograms per liter

mg/L = milligrams per liter

VOCs = Volatile Organic Compounds

ft-bgs = feet below ground surface

Notes:

ug/L = micrograms per liter

mg/L = milligrams per liter

VOCs = Volatile Organic Compounds

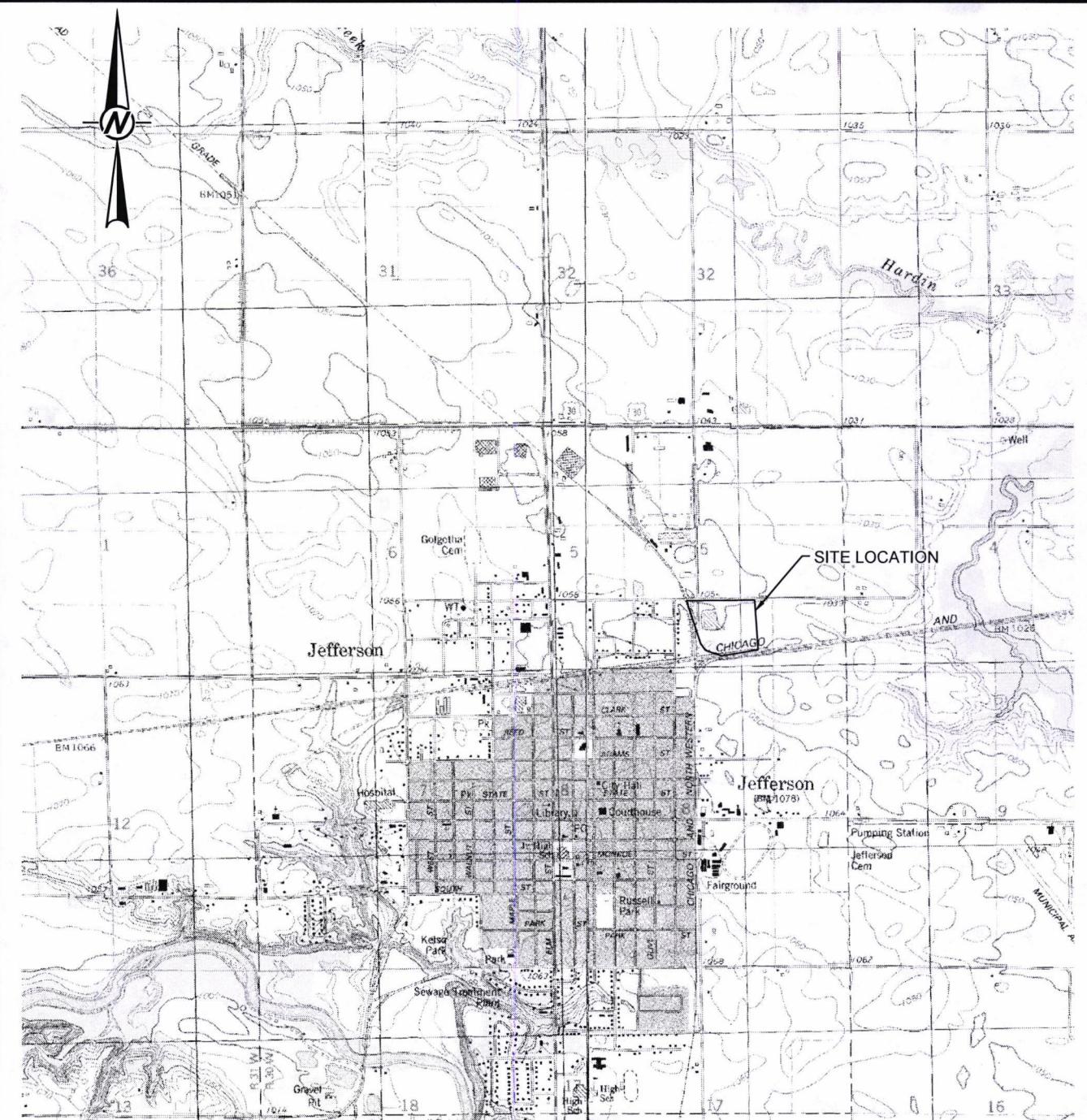
ft-bgs = feet below ground surface

Prepared by: TGB

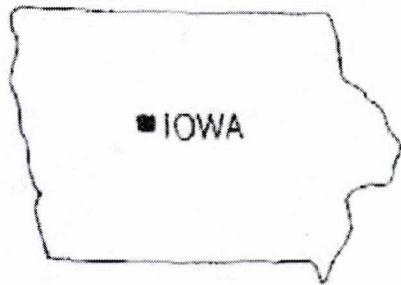
Checked by: JMR

Reviewed by: APTM

## **FIGURES**



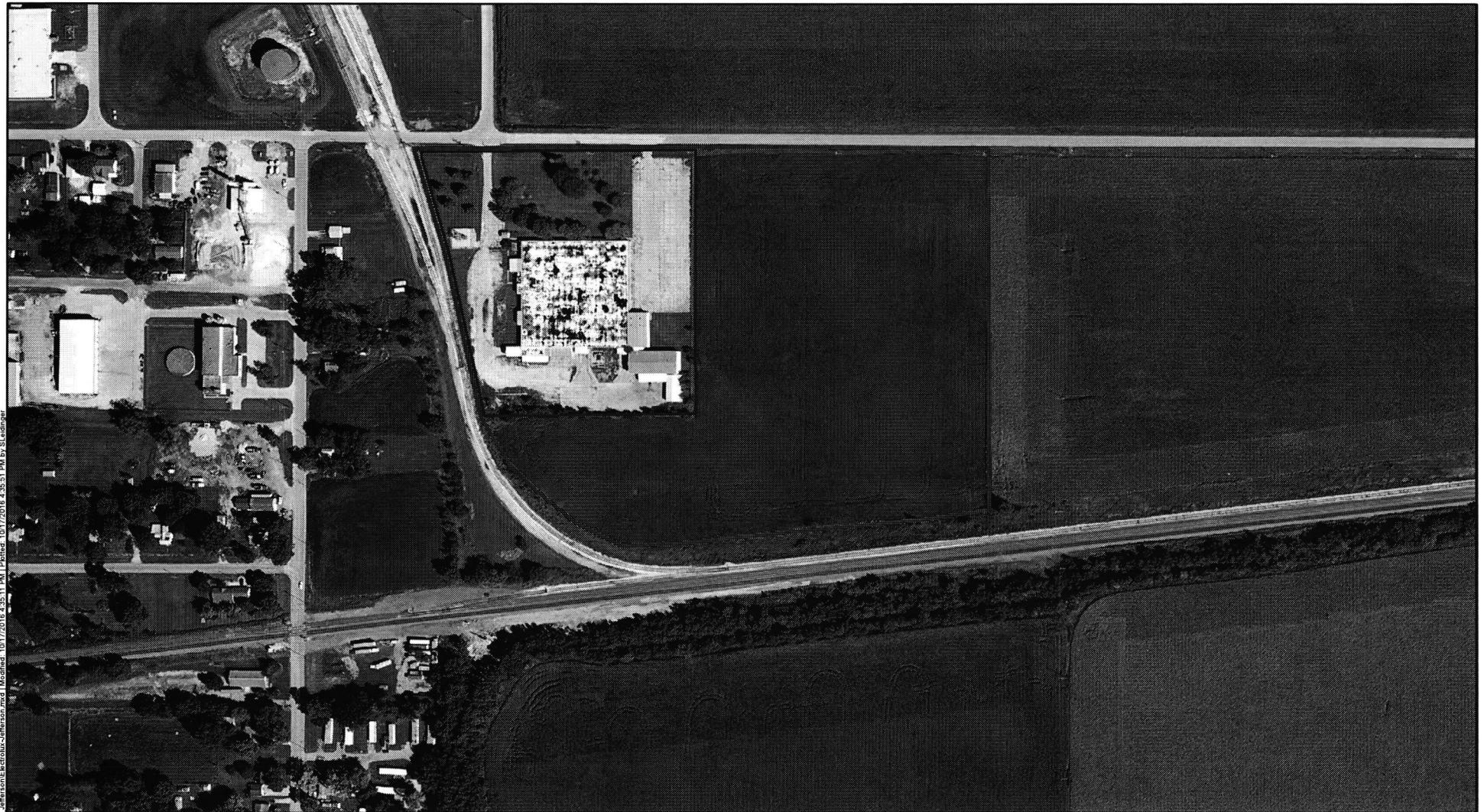
0 1/4 1/2 3/4  
SCALE MILE



PROJECT		ELECTROLUX HOME PRODUCTS		
		JEFFERSON, IOWA		
TITLE		" SITE LOCATION MAP "		
 Golder Associates		PROJECT No.	103-87305	
DESIGN	JSP	2016-10-03	FILE No.	10387305M001
CADD	RWC	2016-10-03	SCALE	AS SHOWN
CHECK	ATK	2016-10-17	FIGURE	
REVIEW	APTM	2016-10-17		

#### REFERENCE

Base maps taken from U.S.G.S map titled, "East Jefferson, Iowa" and "West Jefferson, Iowa", dated 1986.



Map V001.GIS Projects\2009\ektdotlux\_Jefferson\Electrolux-Jefferson.mxd | Modified: 01/17/2016 4:35:11 PM | Posted: 01/17/2016 4:35:51 PM by Staudinger

#### LEGEND

- Approximate Site Property Boundary
- Former Manufacturing Area

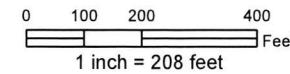
#### REFERENCES

1. Imagery of Jefferson Iowa taken from the United States Department of Agriculture - Farm Service Agency, 2009 National Agriculture Imagery Program. Photo Date: 2010.

2. North American Datum 1983 Iowa State Plane North in Feet

#### FIGURE NARRATIVE

This figure shows the approximate site property boundary and developed portion of the site. The site property boundary is an approximation and has not been surveyed by a licensed surveyor.



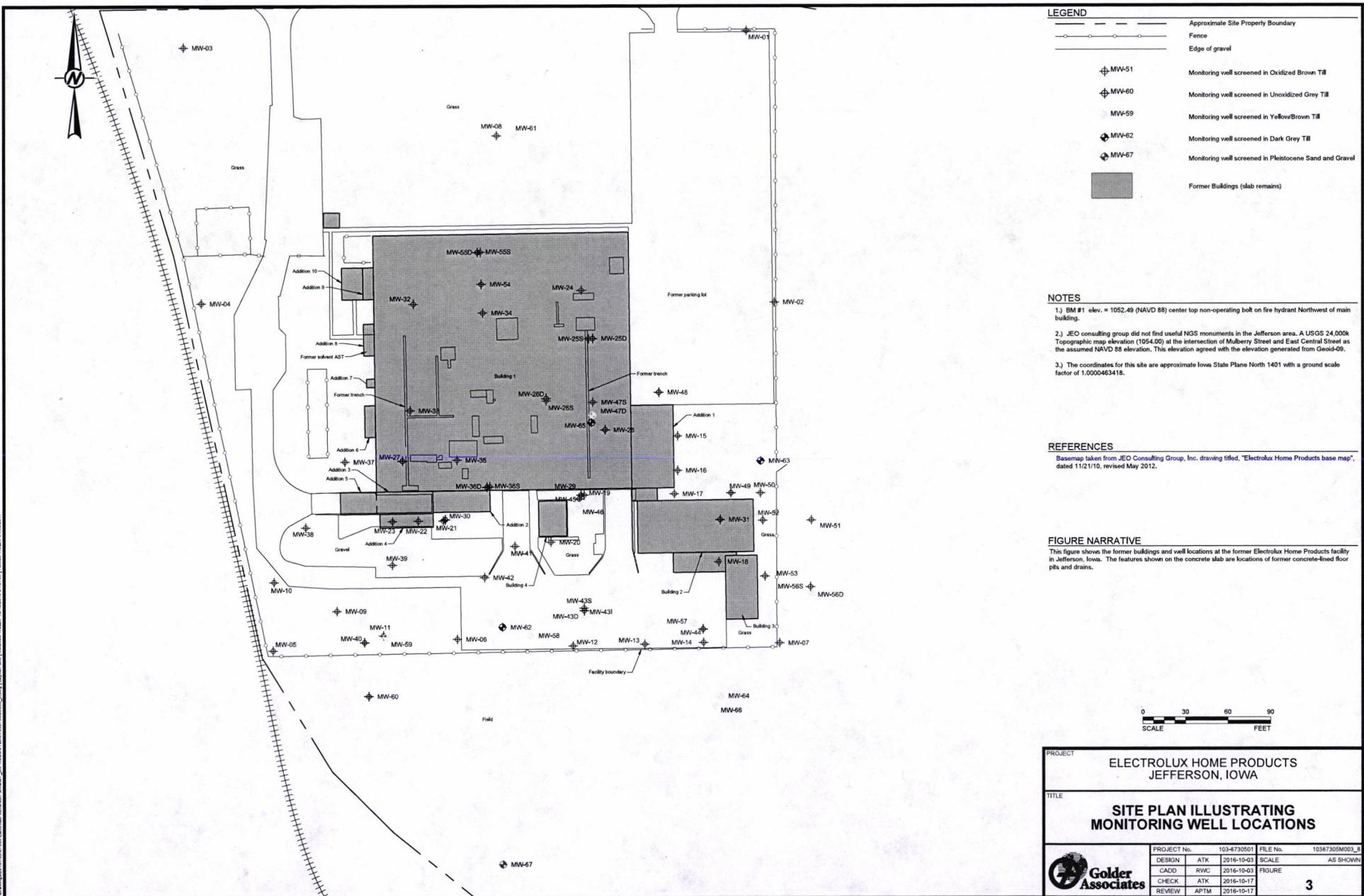
FILE No. Electrolux\_Jefferson  
PROJECT No. 103-87305 REV. 0

SCALE	AS SHOWN
DATE	10/17/2016
DESIGN	CDS
DIS	SHL

CHECK ATK  
REVIEW APTM

Site Vicinity Map

Electrolux Home Products - Jefferson, IA FIGURE 2



Approximate Depth (ft-bgs)	Diagram	Unit	USCS Description	Average Hydraulic Conductivity (cm/sec)	Soil Description (GA-13-SB, MW-62, MW-63, MW-65, MW-67)	Basis
0		Oxidized Till	CL	2E-06	Oxidized, mottled, brown to yellowish brown, Silty Clay and Sand.	
10		Unoxidized Till	CL	3E-08	Unoxidized, firm to stiff, gray to dark gray, Silty Clay and Sand, fine to coarse, with trace fine to coarse gravel.	
20		Yellow Brown Till	SM to ML	1E-04	Loose to firm, yellow-brown, Sand to Silt, fine to coarse, trace fine to coarse gravel, moist to wet.	
30			ML to CL	NA	Stiff to Very Stiff, olive brown to dark gray to black, Silty Clay to Silt/Clayey Silt.	On-Site Investigations
40			CL	1E-06	Very Stiff brown to gray sandy silty clay, fine to coarse, trace rounded to subrounded fine gravel, moist.	
50			CL to ML	1E-06	Very stiff to hard SILTY CLAY, some sand, trace gravel, dark brown with light brown/orange laminations/ mottling along sandier layers, dry.	
60			SP to SW	8.5E-02 (IDNR, 2013)	Loose, light brown fine to coarse SAND (majority medium sand), slightly coarser with depth, trace gravel up to 1/2", trace silt, wet.	Regional Boring Logs
70			CL to ML	NA	Very stiff, SILTY CLAY, some sand, trace gravel, gray/brown with abundant orange/brown mottling, some pockets of tan silt/sand (weathered sandstone gravel?), moist, till.	
80						
90		Pleistocene Sand and Gravel				
100		Lower Dark Gray Till				

#### NOTES

CL = Low-plasticity clay

SM = Sand and silt mixture

ML = Non-plastic and medium plasticity silt

SP = Poorly graded sand

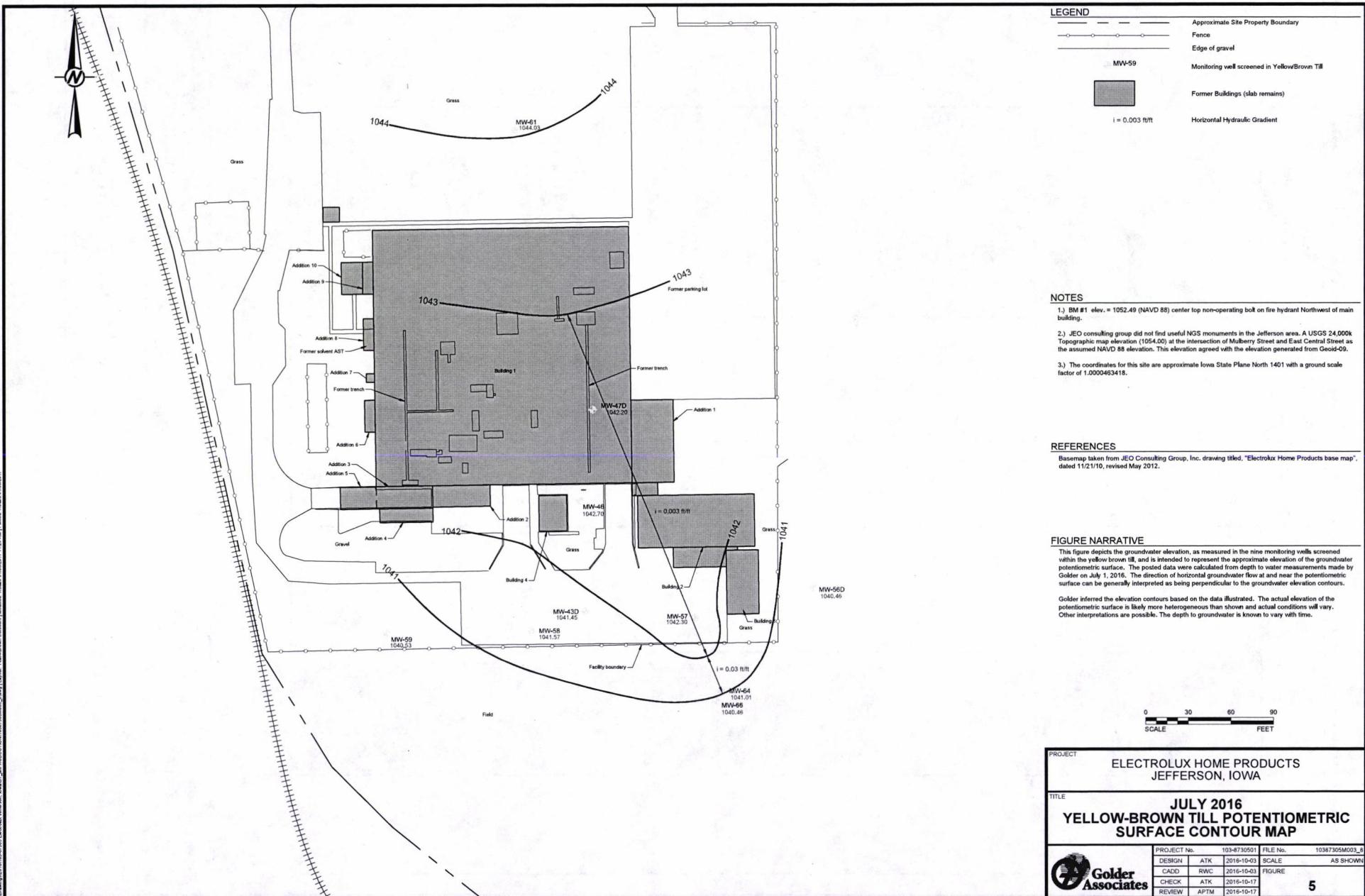
SW = Well graded sand

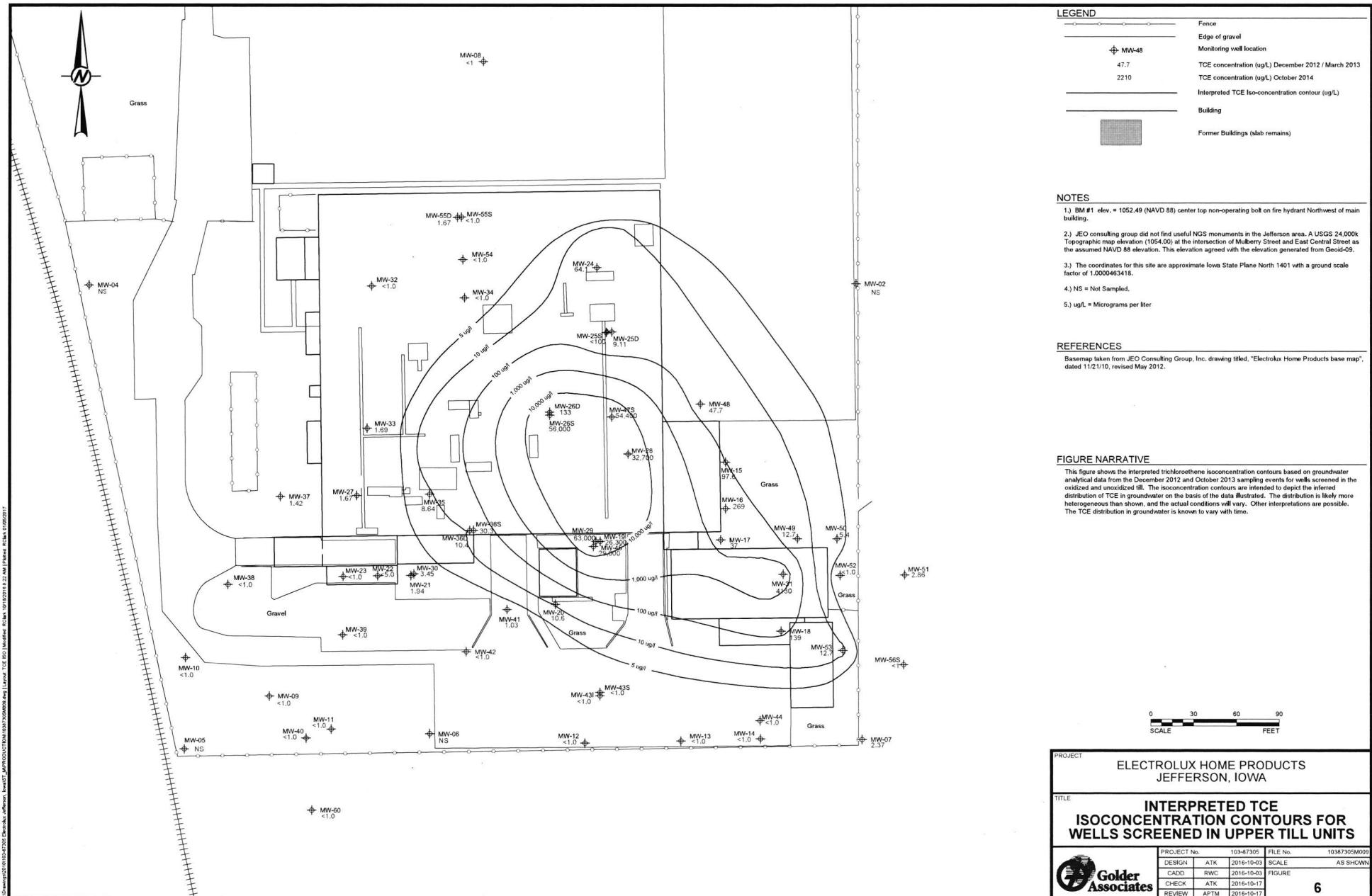
NA = Not available

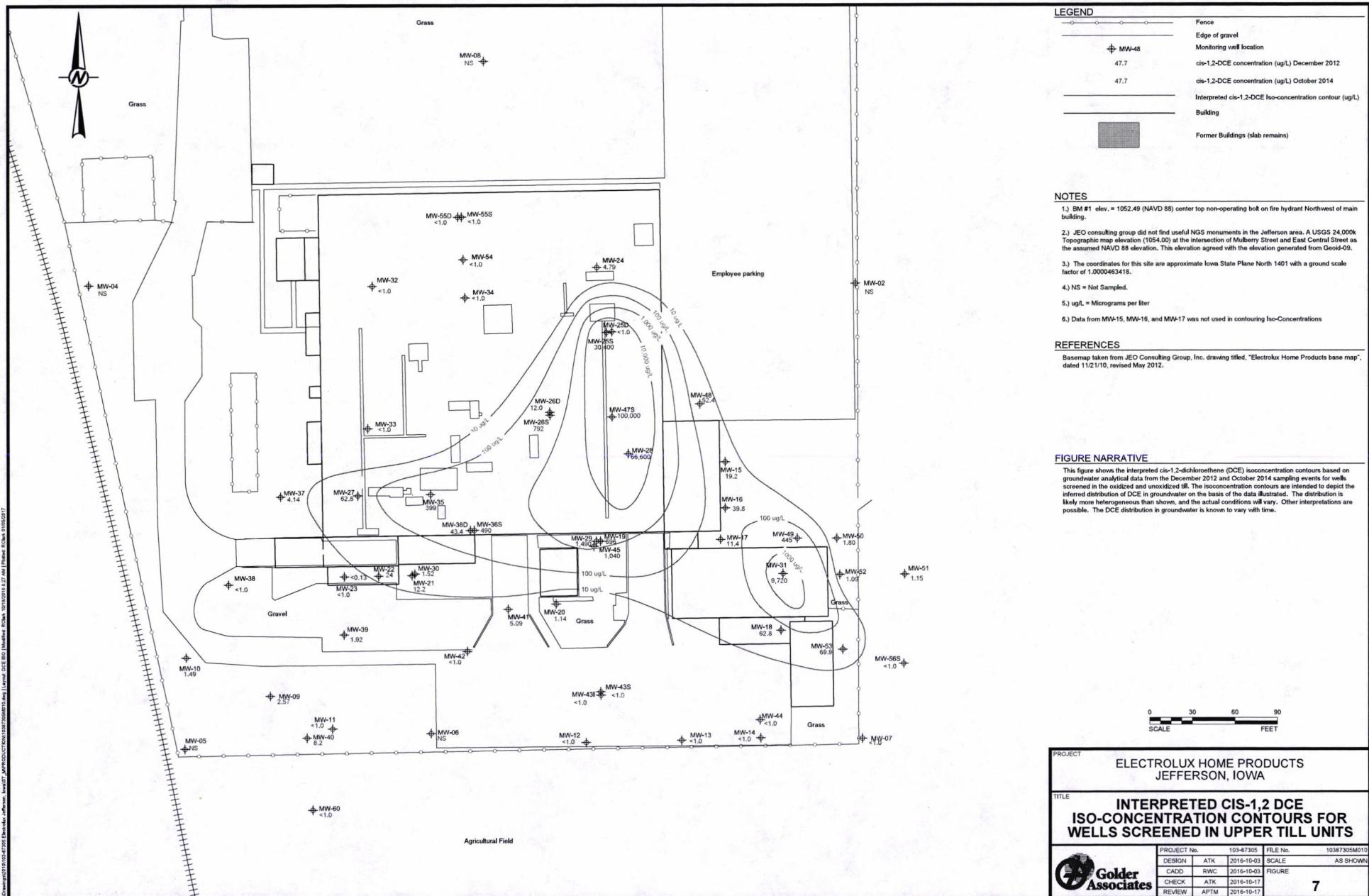
cm/sec - Centimeters per second

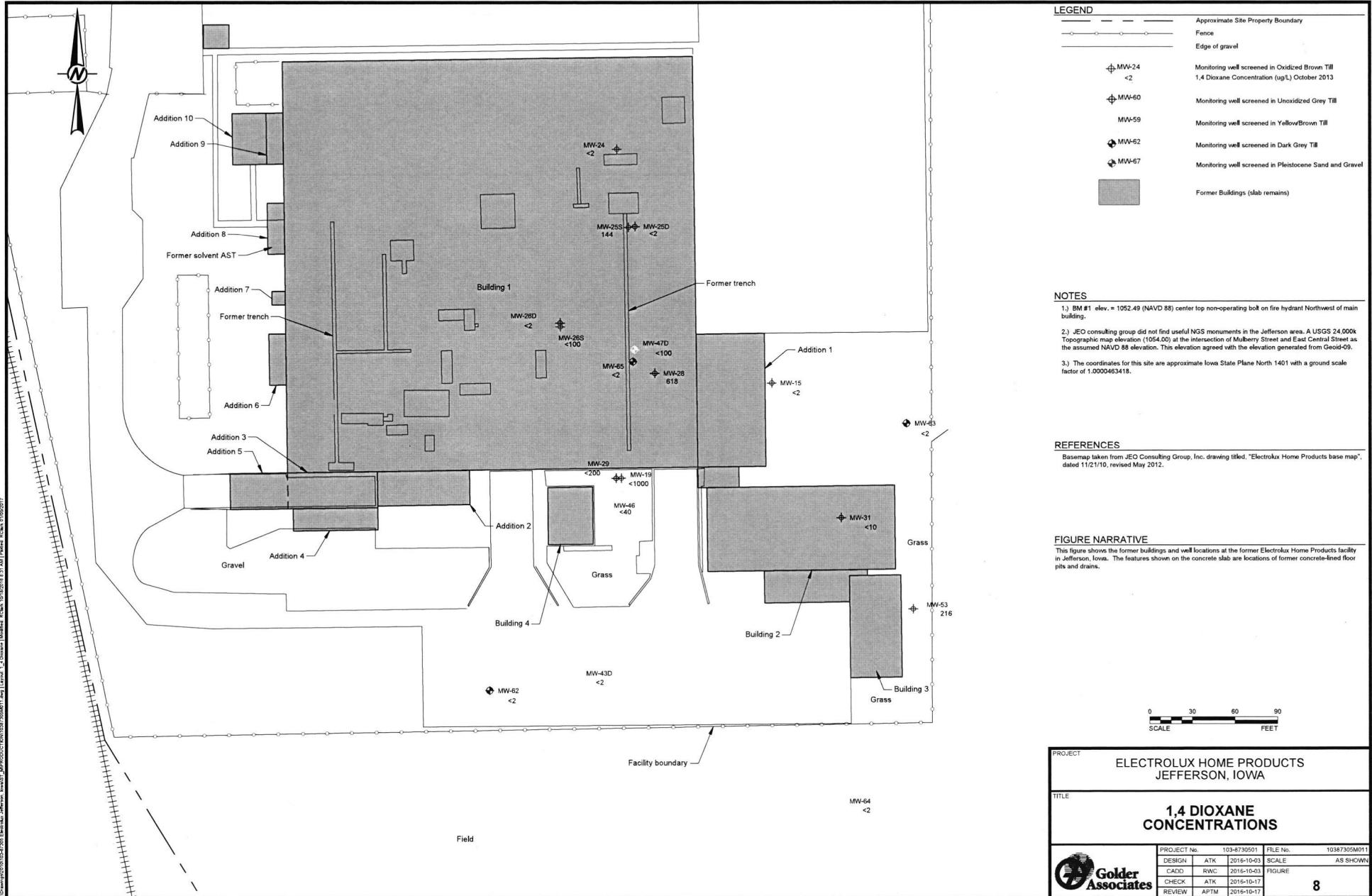
Hydraulic conductivity values from onsite slug tests, except where noted.

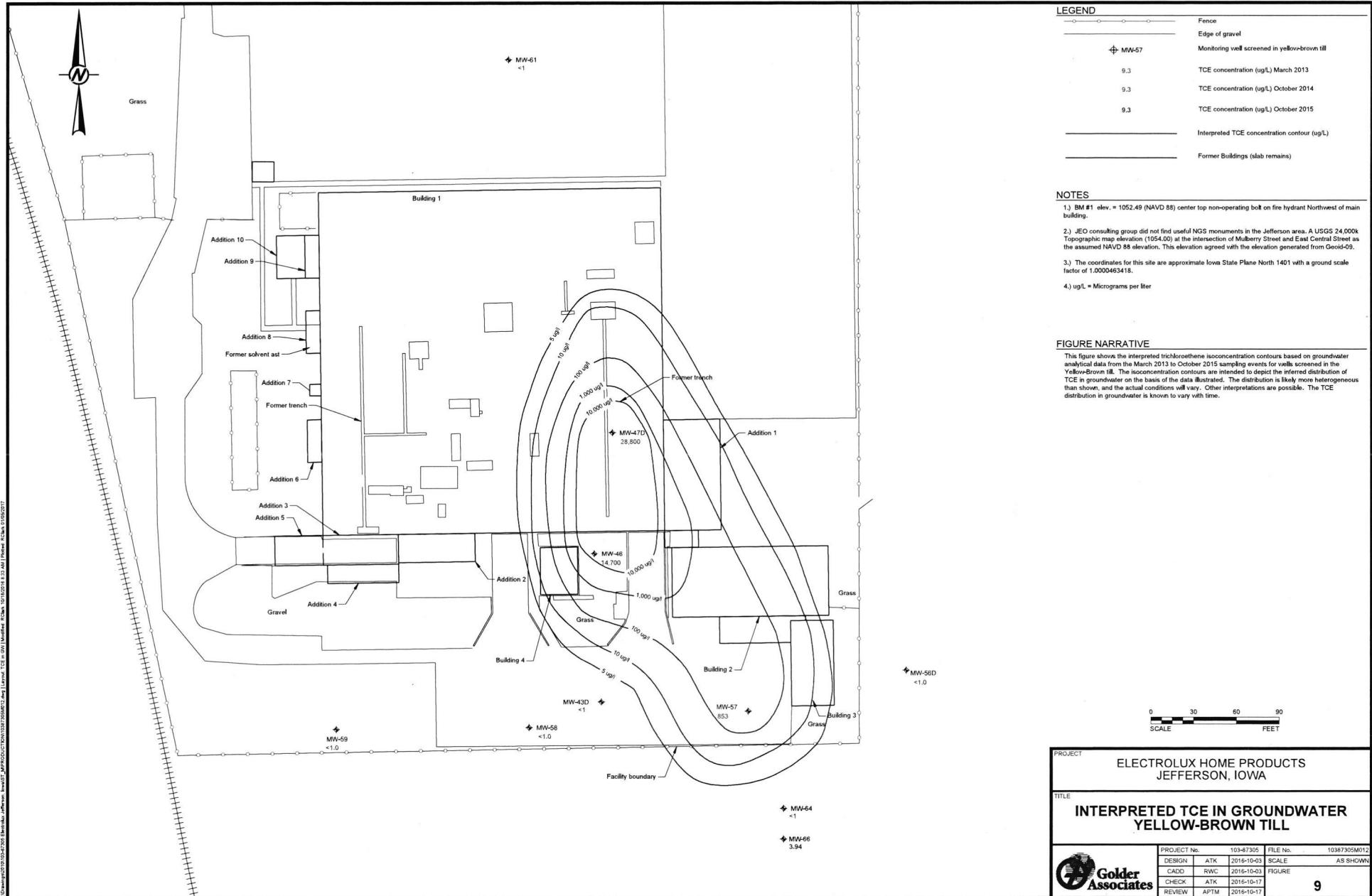
PROJECT		ELECTROLUX HOME PRODUCTS JEFFERSON, IOWA		
TITLE				
GENERALIZED GEOLOGIC PROFILES				
		PROJECT No.	103-87305	
DESIGN	JSP	2016-10-03	FILE No.	10387305M007
CADD	RWC	2016-10-03	SCALE	AS SHOWN
CHECK	ATK	2016-10-17	FIGURE	
REVIEW	APTM	2016-10-17		

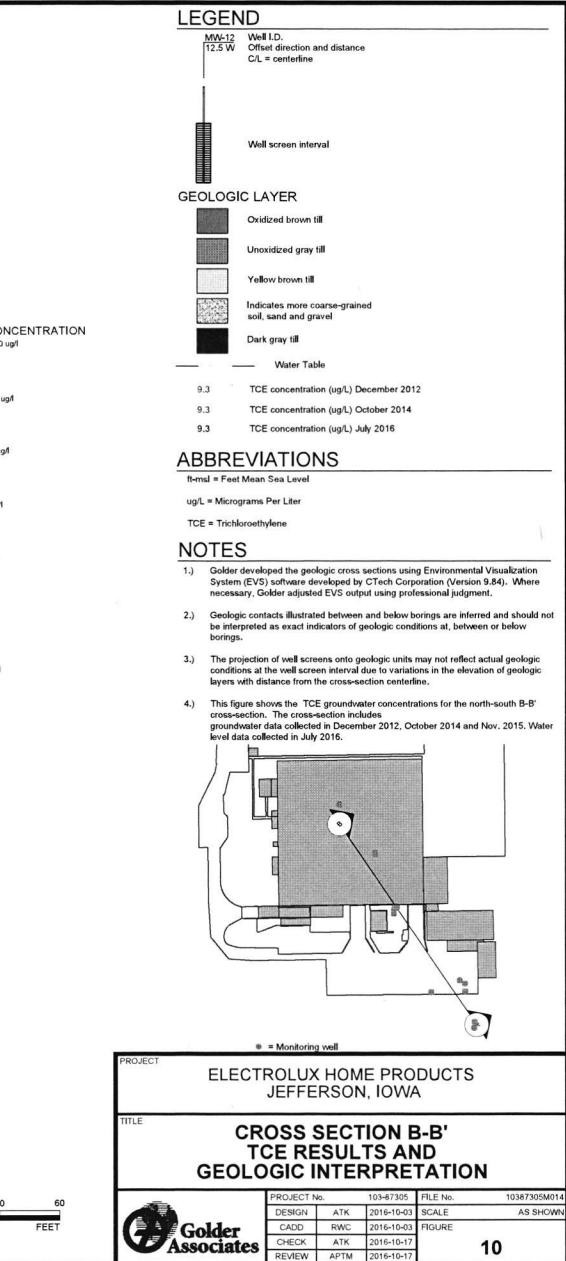
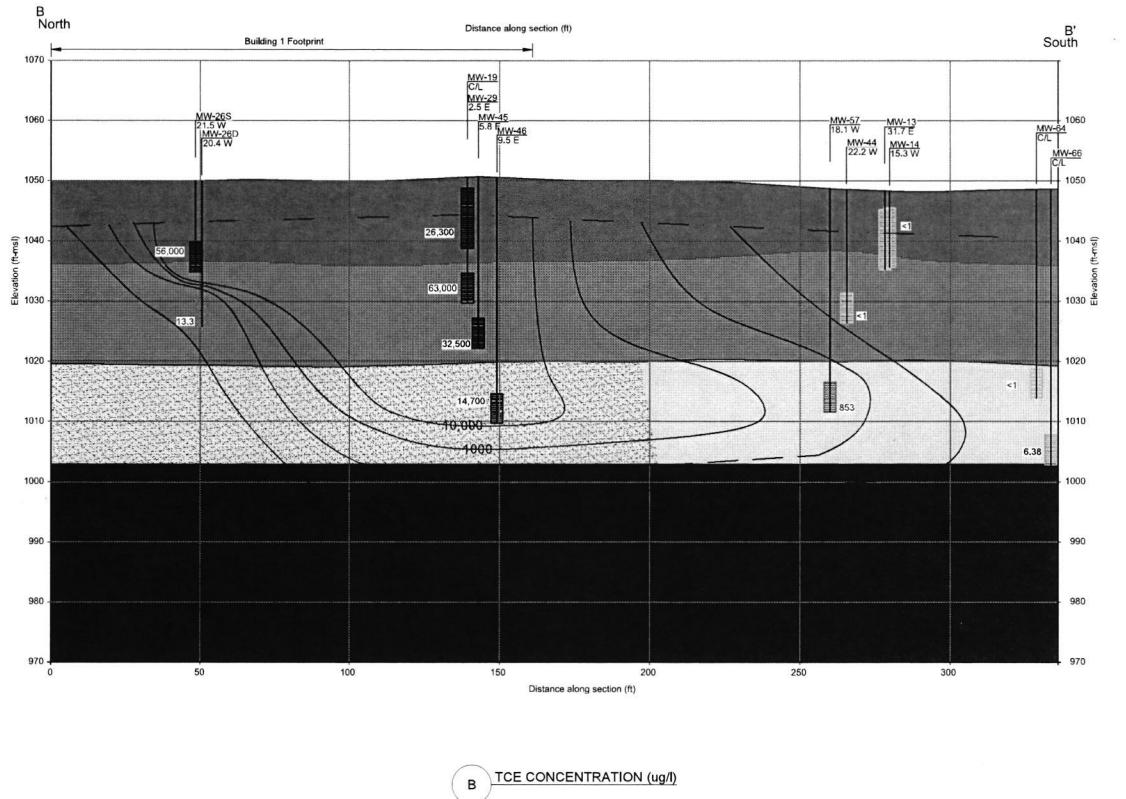


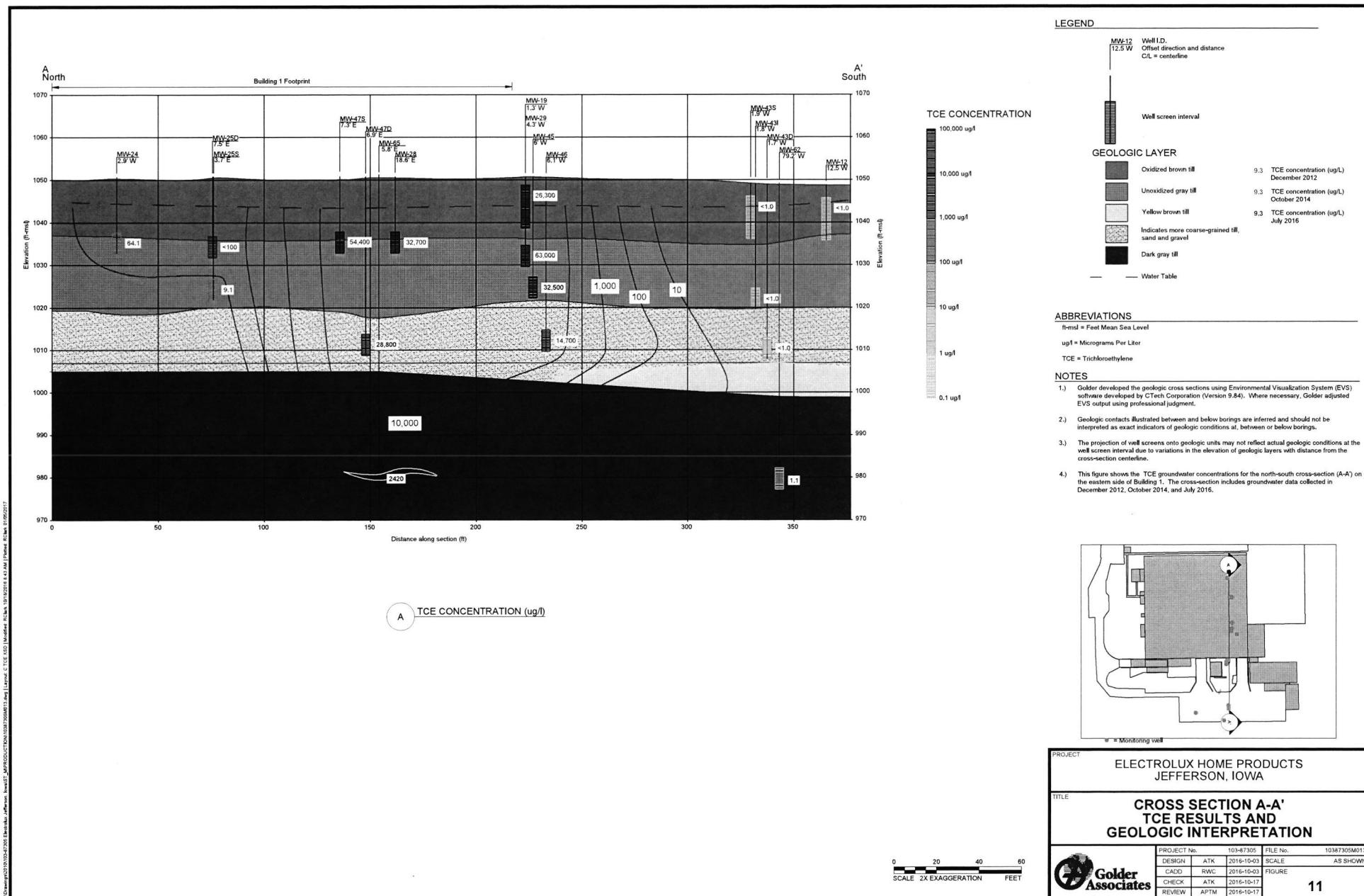


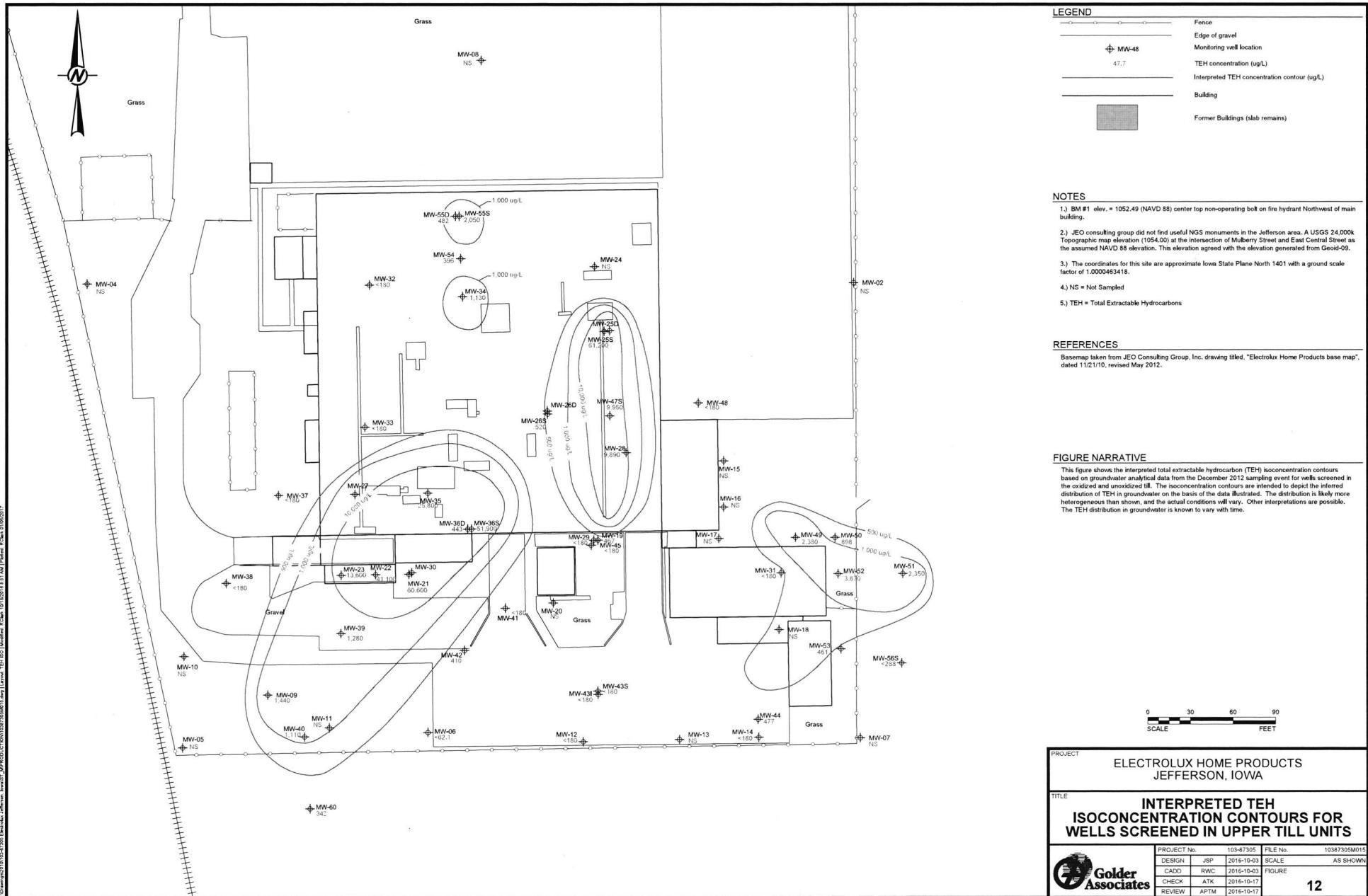












**ATTACHMENT A**

January 2017

Project No: 103-87305.01

**Table 1: 2017 Environmental Monitoring Program**  
**Former Electrolux Home Products Inc. Facility**  
**Jefferson, Iowa**

Well ID	Screened Interval (feet bgs)	Sampling Rationale
<b>Upper Till Units</b>		
MW-24	13-18	Monitor northern end of plume
MW-26S	11-16	Monitor hot spot
MW-28	13-18	Monitor hot spot
MW-29	16-21	Monitor hot spot
MW-30	21-26	Monitor area SW of plume
MW-31	13-18	Monitor SE plume boundary
MW-33	3-13	Monitor western plume boundary
MW-34	3-13	Monitor NW plume boundary
MW-43I	24.5-29.5	Monitor south of plume boundary
MW-44	17-22	Monitor south of plume boundary
MW-51	3-13	Monitor downgradient edge of plume
MW-56S	3-13	Monitor SE plume boundary
<b>Yellow-Brown Till Unit</b>		
MW-43D	36-41	Monitor southwestern side of plume
MW-47D	37-42	Monitor hot spot
MW-56D	33-38	Monitor southeast side of plume boundary
MW-57	32-37	Monitor plume centerline
MW-61	34-39	Monitor upgradient of plume
MW-66	45-55	Monitor downgradient edge of plume
<b>Dark Gray Till</b>		
MW-62	67-72	Monitor southwest side of facility
MW-63	67-72	Monitor southeast side of facility
MW-65	68-73	Monitor beneath hot spot
<b>Pleistocene Sand and Gravel</b>		
MW-67	87-97	Monitor groundwater quality in Pleistocene Sand and Gravel

**Table 2: Groundwater Sampling Analytical Methods**  
**Former Electrolux Home Products Inc. Facility**  
**Jefferson, Iowa**

Well ID and Unit	Parameter	Method <sup>(a)</sup>	Field Samples/ April	Field Samples/ September	Field Duplicates <sup>(b)</sup>	MS/MSD <sup>(c)</sup>	Trip Blanks	Equipment Blanks	Number of Samples	Field Parameters <sup>(g)</sup>
<b>Upper Till Units:</b>  MW-24, MW-26S, MW-28, MW-29, MW-30, MW-31, MW-33, MW-34, MW-43I, MW-44, MW-51, MW-56S	VOCs	SW-846 8260C	22	22	1 per 10 samples	1 per 20 samples	(d)	(e)	(f)	Water Quality
	Alkalinity (CaCO <sub>3</sub> )	SW-846 2320B	22		1 per 10 samples	1 per 20 samples	(d)	(e)	(f)	
	Dissolved Gases (Methane, Ethane, Ethene)	SW-846 3810	22		1 per 10 samples	1 per 20 samples	(d)	(e)	(f)	
	Sulfate	SW-846 300.0	22		1 per 10 samples	1 per 20 samples	(d)	(e)	(f)	
	Sulfide	SW-846 376.2	22		1 per 10 samples	1 per 20 samples	(d)	(e)	(f)	
	Chloride	SW-846 300.0	22		1 per 10 samples	1 per 20 samples	(d)	(e)	(f)	
	Iron	SW-846 200.7	22		1 per 10 samples	1 per 20 samples	(d)	(e)	(f)	
	Manganese	SW-846 300.0	22		1 per 10 samples	1 per 20 samples	(d)	(e)	(f)	
	Total Organic Carbon	SW-846 415.1	22		1 per 10 samples	1 per 20 samples	(d)	(e)	(f)	
<b>Pleistocene Sand and Gravel Unit:</b>  MW-67										

Notes:

(a) EPA Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW-846), (U.S. EPA Third Edition, Final Update III, December 1996). Updated 2013

(b) Field duplicates will be collected at a frequency of 1 per 10 samples, per analysis, per sampling round.

(c) Matrix spike and matrix spike duplicate samples will be collected at a frequency of 1 per 20 samples, per analysis, per sampling round.

(d) One trip blank will be submitted with each cooler containing samples for VOC analysis. The actual number of samples will depend on the duration of the field program.

(e) Equipment blanks will be collected at a frequency of 1 equipment blank per sample team per day based on sampling method using disposable equipment or one per 10 samples with non-disposable sampling equipment.

(f) Number of total samples associated with each site to be determined in the field based on sampling order and number of coolers used.

(g) Monitoring well water-quality parameters include temperature, pH, dissolved oxygen, specific conductance, oxidation-reduction potential, and turbidity.

Checked by: JSP  
Reviewed by: APTM

